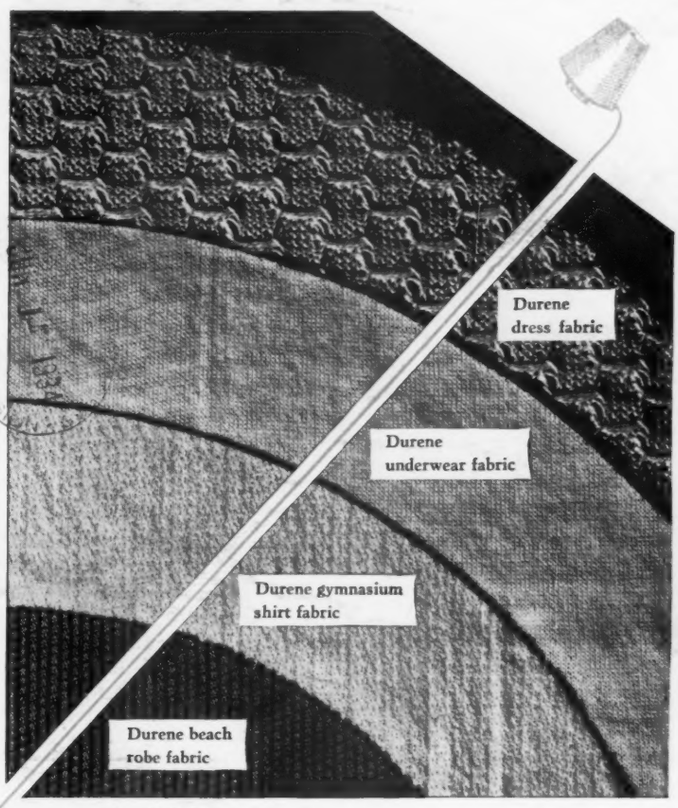
JUNE, 1934

COTTON

Serving the

TEXTILE INDUSTRIES



Fabric Knitters and Weavers

FIND REAL ADVANTAGES

in CONTROL MANUFACTURED DIXIE *Durene*

Fabric knitters and weavers find that Dixie durene has strength for a variety of uses because it is spun of long stapled cotton, then control-mercerized and air dried. There is no brittleness or unwieldiness about Dixie durene.

They find that Dixis durene is available in all standard counts, in single or ply, on cops, in skeins, on tubes or cones. It comes to them either natural, dyed, gassed or bleached depending on their particular needs.

A letter to the main office will bring you any information you may need.

DIXIE MERCERIZING COMPANY
CHATTANOOGA, TENNESSEE

YARNS
WE DON'T TELL 'EM
WE SELL 'EM

F. P. YARNS NEVER VARY IN QUALITY

"Yarns of the sea" may vary greatly in quality, even when told by experienced "spinners."

On the other hand F. P. yarns never vary in quality, insofar as such a thing can be said of any cotton yarn. In other words they come from highly reputable mills that take special pride in standardization of quality, both in materials and in manufacturing methods.

F. P. offerings include all popular counts and qualities,— natural, bleached or dyed, —in almost any put-up commonly used. We maintain large stocks in Providence and Philadelphia.

Samples and prices furnished on request.

FRANKLIN PROCESS COMPANY

Yarn Merchants and Yarn Dyers. Also Manufacturers of Glazed Yarns and Machines for Dyeing and Bleaching Yarns in the Package Form, Cotton and Wool Raw Stock, Worsted Tops and Worsted Yarn on Jackspools, also Machines for Soaking Silk. Main Office and Plant at Providence, R. I. Branch Plants at Philadelphia, Pa., Greenville, S. C., and Chattanooga, Tenn. New York Rep., 40 Worth Street

FRANKLIN PROCESS

COTTON YARNS AND CUSTOM YARN DYEING

COTTON is published monthly by W. R. C. Smith Publishing Co. Dalton and Atlanta, Ga. Subscription Rates, United States and Possessions, $1.00 for one year; $2.00 for three years; Canada, $1.50 per year; Foreign Countries, $2.00 per year. Entered as second-class matter at the postoffice, Dalton, Ga., under the Act of March 3, 1879.

A New Champion

An "Old Man"
in the Ring
Thinks He is Still Good
He Feels Good
He Looks Good
But He
Can't Deliver
Because
There is a New Man
Just a Little Better

Those Old Model Looms in Your Weave Room Still Look Good to You— They are Good in every way except that They CAN'T DELIVER because there is a NEW LOOM JUST A LITTLE BETTER

X Model is the New Champion

It has become Standard Equipment—We have Other New Models for Special Weaves—But they all have X Model Features Are built on X Model Fundamentals Every Loom Older than the X is an Old Time Model and Sub-Standard Equipment

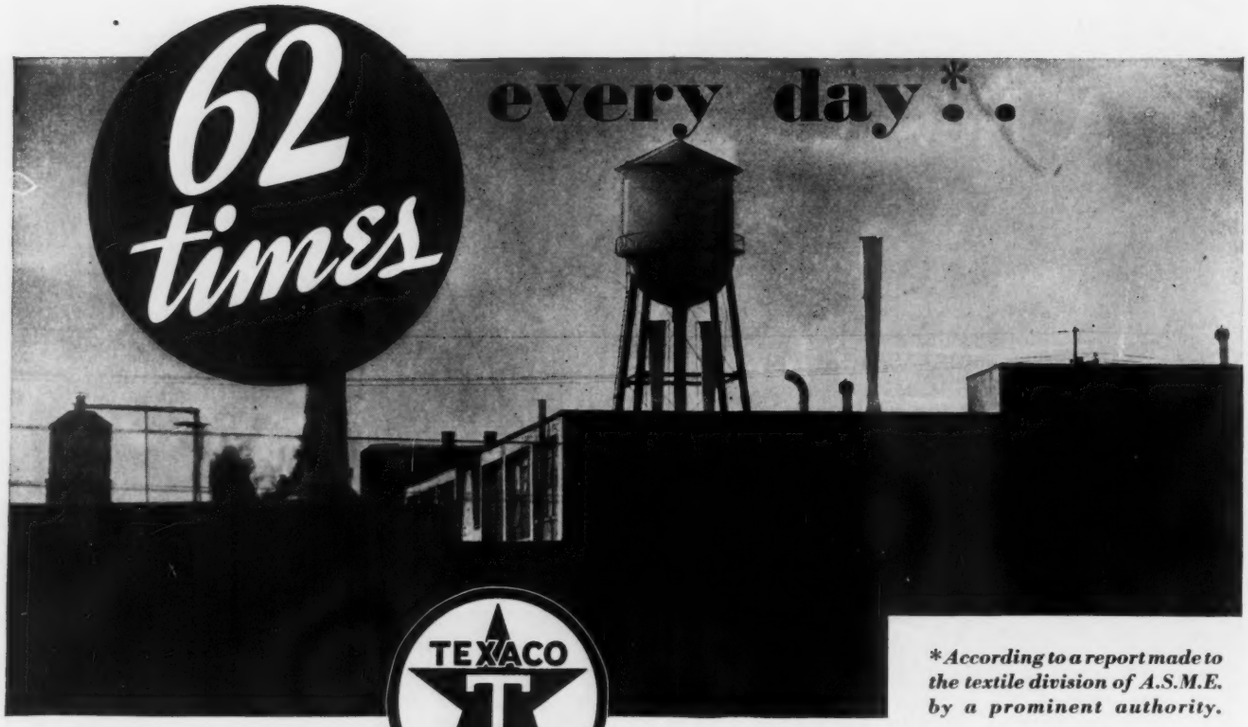
80% of Our Business is in X Models

Modern Business Conditions demand Mill Equipment that is able to meet any Probable Competition

DRAPER CORPORATION

Hopedale Massachusetts

Southern Offices Atlanta Ga and Spartanburg S C



TEXACO
REG. T. M.

**According to a report made to the textile division of A.S.M.E. by a prominent authority.*

TEXACO *tested* LUBRICANTS

help boost profits

Because you use 62 kinds of machinery that needs lubricating every day, the oils and greases you use are bound to be either a help or a hindrance to profits in your plant. Texaco *tested* Lubricants have proved—by outstanding results in many textile mills just like yours—their ability to give lubrication results that boost profits.

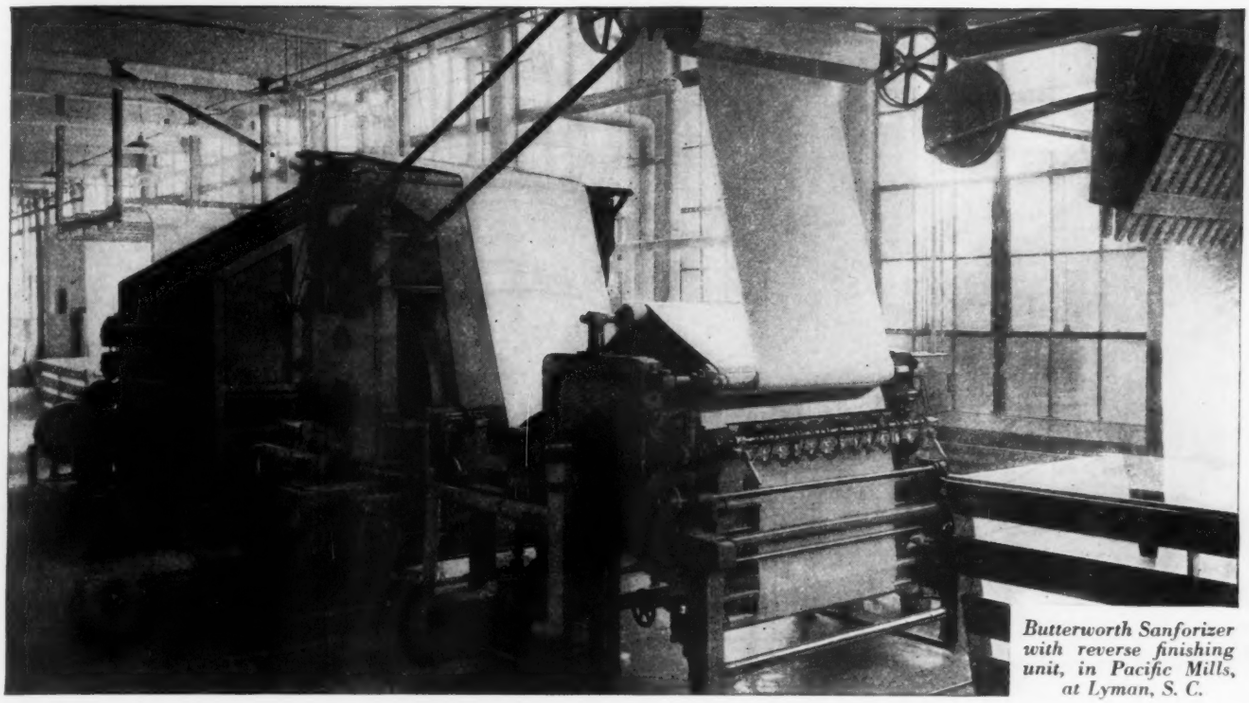
Plain bearings on openers—card and picker waste cleaners—carding machines, combers, spinning mule spindles, quilling machine cylinders and shafts, brushers, lop cutters, cloth winders—in fact, 62 machines and mechanical parts require lubrication every day. Using the wrong kind of oils and greases—or buying entirely on a price basis—endangers profits. This is a problem that is worth any man's consideration. Texaco *tested* Lubricants, having *proved* their lubricating quality and effectiveness in textile service similar to yours, become an *economical help to profits* because they lubricate effectively.

You want bigger profits—then *look to your lubrication!* Save where the savings can be made. In this connection Texaco Engineering Service can be of vital help to you. Write to The Texas Company—no obligation.

GET YOUR COPY

This book will help you—give you the latest information on new developments—new machinery—new lubrication. It will help you to new savings and greater profits. Send for it. Write The Texas Company, Department JJ 6.

The Texas Company, 135 E. 42d St., N.Y.C. ★ *There is a Texaco tested Lubricant for every purpose*



Butterworth Sanforizer with reverse finishing unit, in Pacific Mills, at Lyman, S. C.

BUTTERWORTH SANFORIZERS can be furnished with extra size cylinder for finishing heavy goods, also with reverse Finishing Unit for giving a finish to the back of the fabric.

When concerns such as these install BUTTERWORTH SANFORIZERS there is little that we need to say.

Erwin Cotton Mills, West Durham, N. C.
The Union Bleachery, Greenville, S. C.
Pepperell Manufacturing Co., Lindale, Ga.
Pepperell Manufacturing Co., Lewiston, Maine
Delta Finishing Co., Philadelphia, Pa.
Lanett Bleachery & Dye Works, Lanett, Ala.
North Carolina Finishing Co., Salisbury, N. C.
Ramapo Finishing Corp., Sloatsburg, N. Y.
Ware Shoals Mfg. Co., Ware Shoals, S. C.
Fair Forest Finishing Co., Spartanburg, S. C.
Highland Park Mfg. Co., Charlotte, N. C.
Robertson Bleachery & Dye Works, New Milford, Conn.
Summerdale Dye & Finishing Co., Holmesburg, Pa.
Lowell Bleachery, St. Louis, Mo.
Amoskeag Manufacturing Co., Manchester, N. H.
Arnold Print Works, North Adams, Mass.
Martin Dyeing & Finishing Co., Bridgeton, N. J.
Pacific Mills, Lyman, S. C.

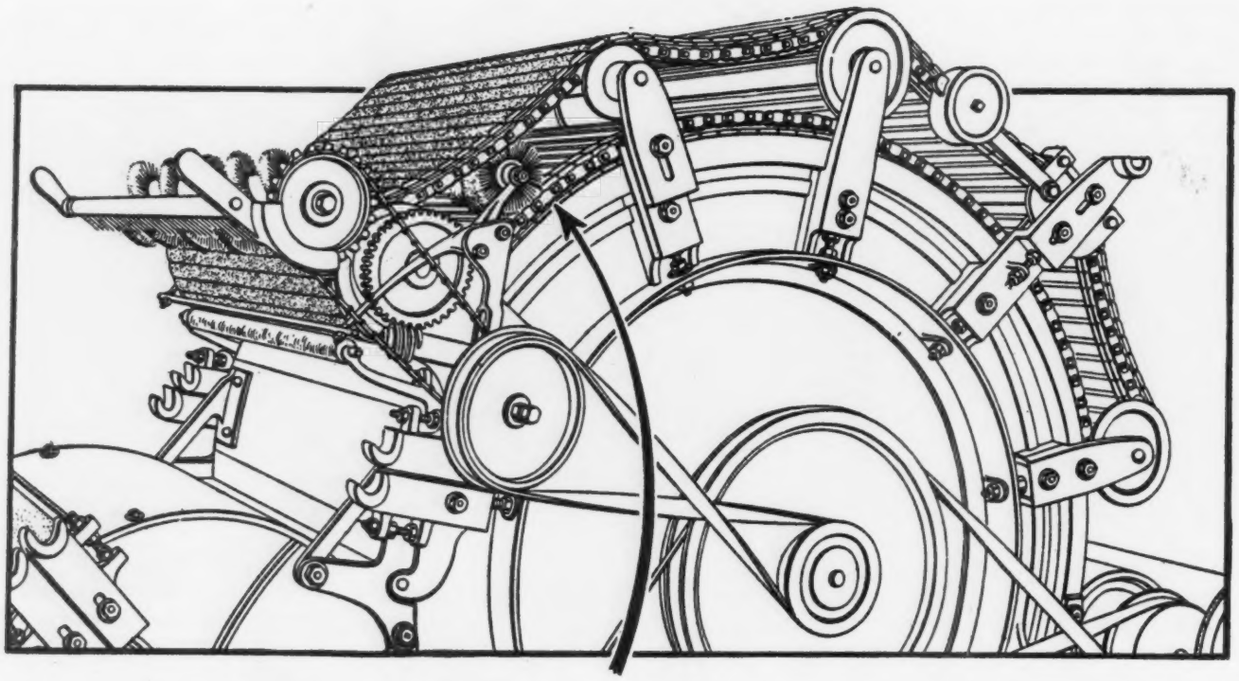
Our engineering department is at your service to discuss any individual question relative to sanforizing your fabrics.

H. W. BUTTERWORTH & SONS CO.
Established 1820
PHILADELPHIA, PA.
PLANTS *at* PHILADELPHIA *and* BETHAYRES, PA.

New England Office: TURKS HEAD BUILDING Providence, R. I.
Southern Office: JOHNSTON BUILDING Charlotte, N. C.
In Canada: W. J. WESTAWAY CO. Hamilton, Ontario

BUTTERWORTH *Finishing* MACHINERY

A COMPLETE LINE OF FINISHING AND RAYON MACHINERY FOR THE TEXTILE INDUSTRY



A Fraction is Close-
.005 is Closer

A carder who wants to run stock with top flats set .005 of an inch from the cylinder has to be certain that his card clothing possesses exact uniformity. With Tuffer cylinder and doffer fillets and Tuffer covered top flats he expects and receives perfect precision. Each Tuffer product is checked and rechecked for minute evenness throughout every stage of manufacture. They are ready to card efficiently, however closely they may be set.

It requires long experience, constant research and highest quality of materials to produce card clothing which regularly meets such exacting requirements. Tuffer card clothing is the result of all three. Every inch of wire must meet temper and straightness specifications for constant, uniform settings. Foundations, built in our own factory of especially woven fabrics, must support every one of the millions of wire points, firmly yet flexibly. Each Tuffer cotton fillet is accurately side ground as well as surface ground. Adding together the service received from Tuffer installations in the cotton industry, there are literally centuries of efficient, low-cost carding credited solely to Tuffer.

Tuffer Products

Lickerin Fillets
Feed Roll Fillets
Tumbler Fillets
Stripper Fillets
Worker Fillets
Doffer Fillets
Fancy Fillets
Cylinder Fillets
Doffer Rings

TRADE MARK
TUFFER
REG. U.S. PAT. OFF.

Tuffer Products

Strickles
Emery Fillets
Burnisher Fillets
Top Flats Recovered and Extra Sets loaned
Lickerins Rewired at Southern Plant.

Midgley Patented Hand Stripping Cards and Inserted Eye and Regular Wire Heddles.

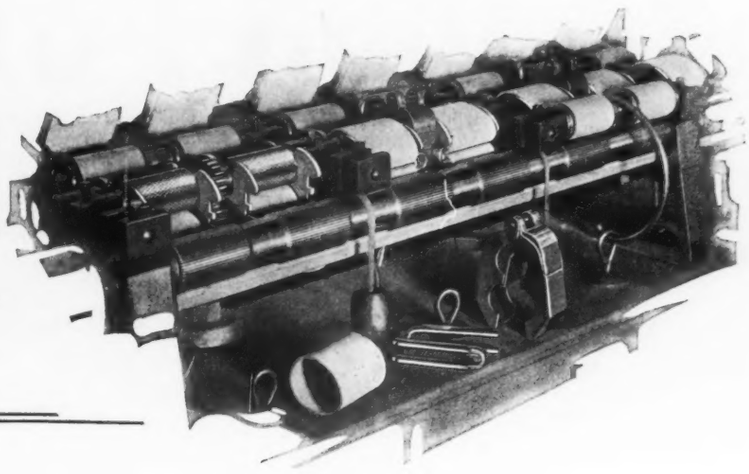
HOWARD BROS. MANUFACTURING CO.

HOME OFFICE & FACTORY—WORCESTER, MASS.

SOUTHERN PLANT
244 Forsyth Street
Atlanta, Ga.

BRANCH OFFICES
Philadelphia, Pa., Dallas, Texas,
and Washington, D. C.

More than 20,000 SPINDLES within a few months



SALES of Whitin-Casablancas for roving frames are gaining ground every week, as more and more mills discover its remarkable advantages.

★ More than fifty cotton mills are partially or wholly equipped with this system today, and adding additional frames.

★ The principle of the system is based on sound mill practise and proven experience. More than two years of experimental and development work have been required to bring it to its present state of mechanical perfection.

★ We offer to you a finished product which will start to pay dividends immediately; not an experiment which is untried.

★ Read in the May issue of the magazine COTTON what has been accomplished . . . what can be done in your mill, on Whitin-Casablancas roving..

WHITIN MACHINE WORKS **WHITIN** WHITINSVILLE, MASS.

WE DIDN'T STOP *with*

...And we *got all five!* It was inevitable that thirty years' experience in making America's leading, quality white paint should enable us to meet these rigorous, self-imposed standards

NOT in only one, two . . . or even four . . . but in *all* the five features so vital to an all-round industrial paint, Barreled Sunlight—America's foremost white paint—has been vastly improved!

Yes . . . impossible as it seems . . . *each* of the five famous Barreled Sunlight qualities has actually been stepped up!

Barreled Sunlight, already so white . . . so powerful in its light-reflecting properties . . . has been made even *whiter*. And of still greater importance — it has been made even more *lastingly white* . . . it remains white, resists "yellowing" even longer than ever before! (See Surety below.)

Spreading Power and *Hiding Power*—have been further reconciled . . . *both* actually increased at the same time. And *Ease of Flow*, that quality so important to speedy, more economical application, has also been improved!

We, alone, through our thirty years of highly specialized experience in the manufacture of white paint — Barreled Sunlight — *exclusively*, have been able to improve every one of the five important white paint qualities . . . and to improve them *all* amazingly in *one* paint!

That was the goal we set . . . the goal we worked for continuously. Though it took years to reach it, we did!

And now, with pardonable pride, we introduce the Improved Barreled Sunlight . . . today's *only* white paint with *every* quality that makes for highest possible light reflection, lowest conceivable cost of application and maintenance upon the ceilings and walls of *your* plant.

Put This Paint to Your Own Tests

You simply cannot afford not to investigate this remarkably Improved Barreled Sunlight. Send for a sample can. Paint out a section of your plant wall. See for yourself the unapproached *new* whiteness of this paint. See how amazingly the tiny quantity of paint in that can spreads . . . how a single coat covers more thickly, *solidly* than you would ever believe possible!

Write today for your sample. Address U. S. Gutta Percha Paint Company, 8-F Dudley Street, Providence, R. I. Branches or distributors in all principal cities. (For Pacific Coast, W. P. Fuller & Co.)

YOUR SURETY

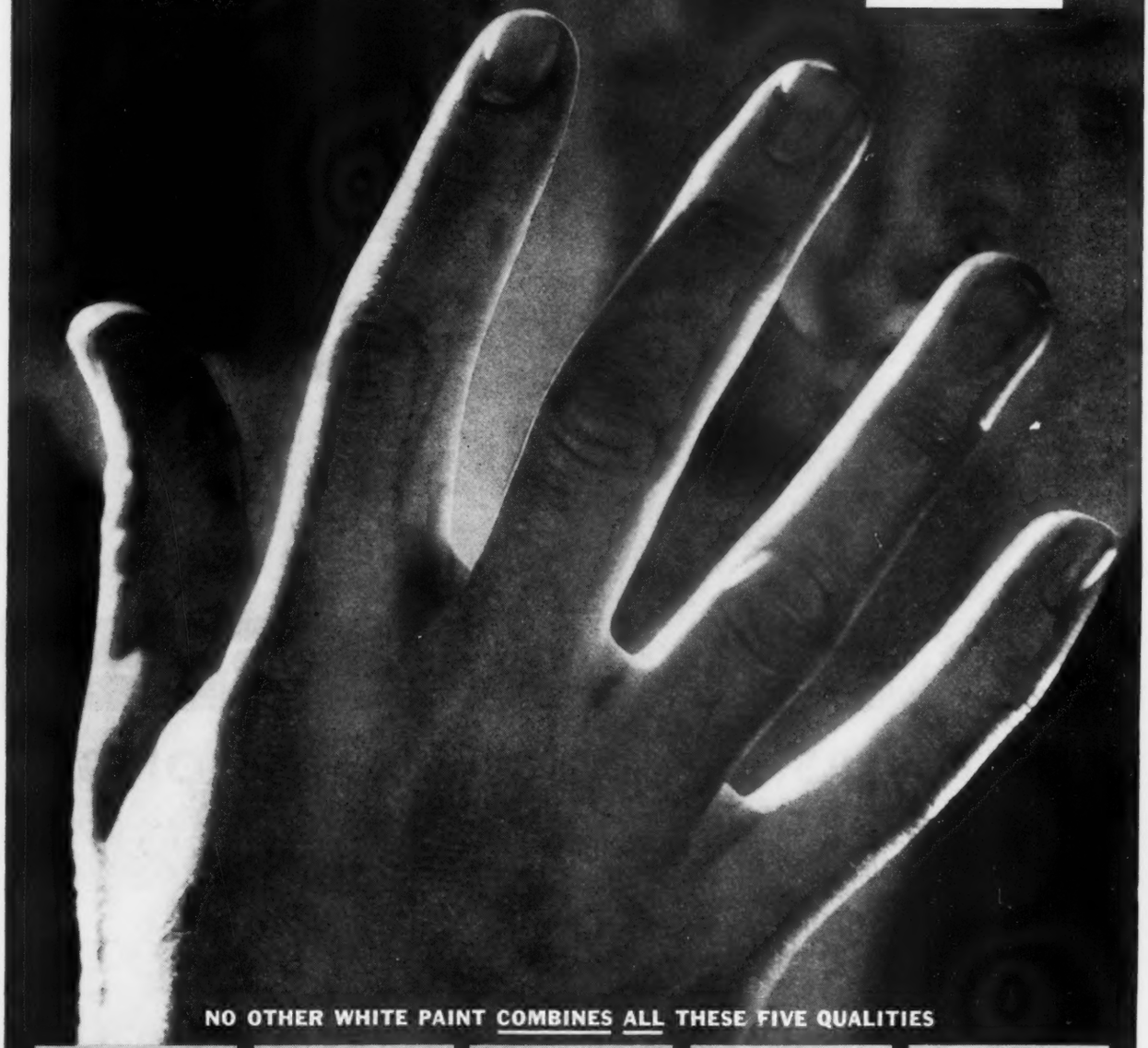
We maintain that Interior Barreled Sunlight, the "Rice Process" White, will remain white longer than any oil-gloss paint or enamel, domestic or foreign, applied under the same normal service conditions and according to our specifications. If it does not do so, we will give, free, enough Barreled Sunlight to repaint the job.

The improved **BARRELED SUNLIGHT**

REG. U. S. PAT. OFF.

one improvement . .

WE INSISTED ON FIVE!



NO OTHER WHITE PAINT COMBINES ALL THESE FIVE QUALITIES

It's now FAR WHITER!
—Still greater in light-reflecting power.

It remains WHITE EVEN LONGER!
—Danger of "yellowing" reduced still more.

It SPREADS STILL FARTHER!
—Even less paint for the job . . . less time and labor to apply it.

It "HIDES" EVEN BETTER!
—Often one coat covers where two of ordinary paints are necessary.

It FLOWS MUCH EASIER!
—A quicker job . . . still less expense for time and labor.

Condor Compensated

PAT. APPLIED FOR
TRADE MARK

BELTS

RUN AT LOW TENSION—

FASTENERS HOLD 3 TO 4 TIMES LONGER

The tendency for fasteners to work free or pull out is overcome to a very great degree in Condor Compensated Belts. The unique Compensated construction allows the ply stresses to equalize as the belt flexes around the pulley, making for definitely *longer* belt and fastener life.

Condor Compensated Belts are recommended for low-tension operation and may be installed on difficult drives where pulleys are small, and temporary overloads run up to 100 per cent.

A trial of Condor Compensated will convince you.

Sold by leading jobbers

NRA

Condor LINE

V-Belt	Fire Hose
Flat Belt	Steam Hose
Air Hose	Mill Sundries
Cone Belt	Suction Hose
Acid Hose	Oilless Bearings
Water Hose	Rubber Lined Tanks

Rubber Covered Rolls
Industrial Brake Blocks and Lining

THE MANHATTAN RUBBER MFG. DIVISION

OF RAYBESTOS-MANHATTAN, INC.

EXECUTIVE OFFICES AND FACTORIES, PASSAIC, NEW JERSEY

FREE TRIAL
AUTOMATIC COTTON SHEAR

The above cut shows a portion of an automatic continuously feeding CLOTH RANGE we recently installed in the cloth room of a prominent southern cotton mill.

The cloth comes in from the right where the seam-stitcher makes the sewings and his machine delivers it over into a feeding scray from which it passes through a twelve cylinder cleaning unit that is equipped with bladed trimming rolls, sanding cylinders and brushes of wire and bristle that thoroughly clean and prepare it for the automatic three blade shear where all hanging threads and other debris are cleared off both sides. The cloth then goes over a measurer to a calender roll with automatic guiders where it comes out a clean even ended batch ready for printer. An automatic bell announces when batch roll should be renewed.

An uninterrupted output without stoppage is maintained all day with only a seam stitcher at one end and an occasional service at the other.

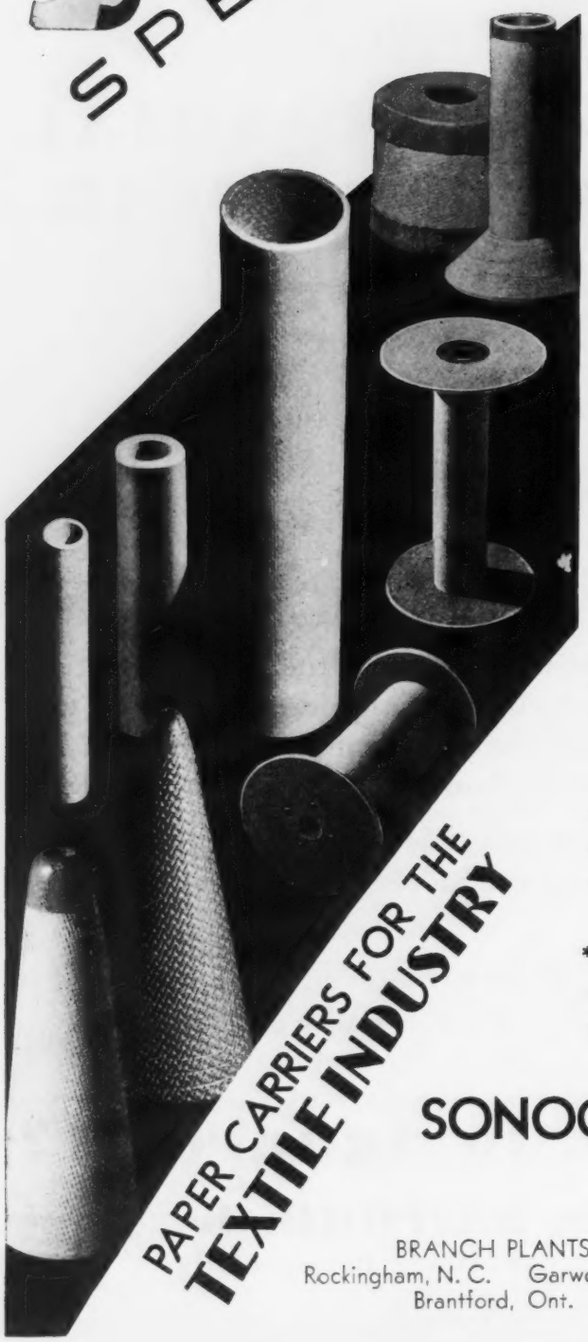
No girls for picking and no shear tenders whatever. The whole range saved enough the first year to pay for its entire cost besides speeding up production.

Can You Afford to Ignore It?

Parks & Woolson Machine Co.
Springfield, Vermont

P. B. RAIFORD, Jr., Concord, N. Carolina
Southern Representative

SONOCO SPECIALISTS



SONOCO—the name synonymous with paper carriers wherever they are used—a name that stands for Constructive Service, upon which the Textile Industry has come to rely—a name behind which are 35 years experience.

Since its earliest years SONOCO has maintained an extensive and aggressive Technical Service and Research Department at the disposal of the Textile Industry. Nearly all of the major improvements made in paper carriers during the last 25 years can be credited to its persistent, patient and ofttimes costly development work.

Here originated the famous **Velvet-Surface** cones and tubes. This department also developed the Dytex-Tube, Paper Bottle Bobbins and Single Head Paper Spools, of which SONOCO are **exclusive** manufacturers.

The Dunlap Nose, the lacquer tip—colored cones, cores and tubes, were all perfected in the SONOCO plants.

Today our greatest pride in accomplishment comes from the fact that the great Industry we serve calls on SONOCO **first** for solution to its problems relating to paper carriers.

***Apart from paper carriers, the recently perfected SONOCO Re-enforced Cork Cot has become one of the greatest achievements in our history.**

NRA MEMBER U.S. WE DO OUR PART

PAPER CARRIERS FOR THE **TEXTILE INDUSTRY**

SONOCO PRODUCTS COMPANY
HARTSVILLE, S. C.

BRANCH PLANTS
Rockingham, N. C. Garwood, N. J.
Brantford, Ont.

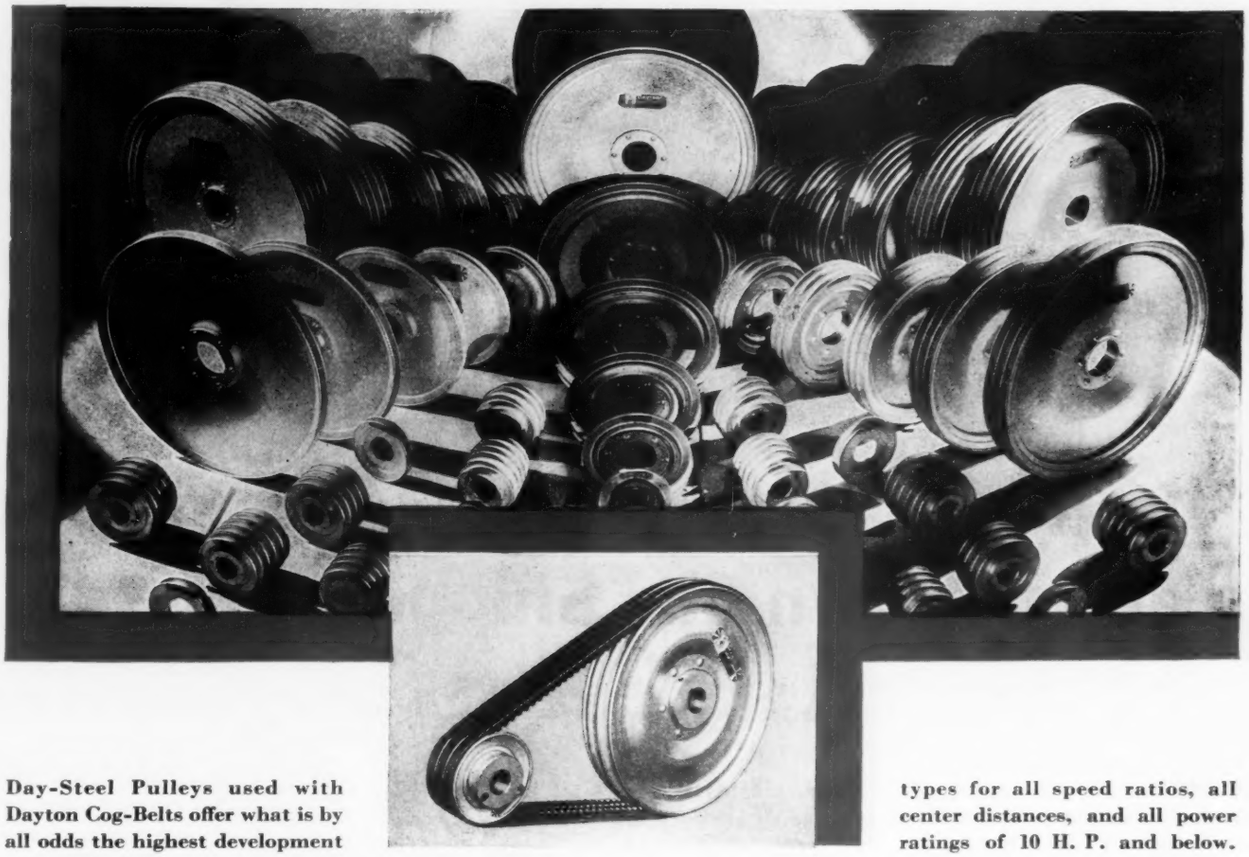
MAIN PLANT AND GENERAL OFFICES
Hartsville, S. C.

EASTERN SALES OFFICE
North Avenue
Garwood, N. J.

HERE'S...

NEW ECONOMY...NEW EFFICIENCY...NEW STANDARDS OF PERFORMANCE...LOW COST...LOW UPKEEP...FOR ALL POWER TRANSMISSION APPLICATIONS UP TO 10 H. P.

Day-Steel Pulleys • Dayton Cog-Belts



Day-Steel Pulleys used with Dayton Cog-Belts offer what is by all odds the highest development yet attained in power transmission equipment for all installations up to 10 H. P.

The scientifically designed Day-Steel Pulleys provide new economies and outstanding performance. Their low cost affords real savings on original installation, and maintenance expense is reduced to the minimum.

Correct Drives Quickly Available

These drives are so standardized that the proper equipment for any application can easily be selected without engineering calculation. Furthermore, delivery of the desired Day-Steel Pulleys and Dayton Cog-Belts can be made immediately from stocks in 40 of the principal industrial centers.

Day-Steel Pulleys are accurately formed from heavy-gauge pressed steel. They are light in weight, strong, rugged. Their unique design assures accurate balance and true running. Bushings are interchangeable, providing the right bore for any size of shaft. The pulleys are made with 1 to 6 grooves, giving a complete range of types for all speed ratios, all center distances, and all power ratings of 10 H. P. and below.

Get Complete Data

We invite you to write for Bulletin No. 110, which gives full information about Day-Steel Pulleys and Dayton Cog-Belts. A copy is yours for the asking.

THE DAYTON RUBBER MFG. CO.
DAYTON, OHIO

Factory Distributors in Principal Cities and all Westinghouse Electric and Manufacturing Company Sales Offices

Dayton

COG-BELT DRIVES

Also manufacturers of Dayton Fan Belts . . . Dayton Red Tube Radiator Hose . . . and the famous Dayton Thorobred Tires and Tubes

"You say, Dr. Steelstrap, that you can cut down our Shipping Costs?"

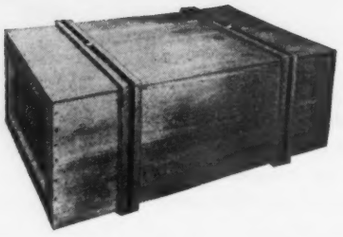
"I am sure I can work out a treatment that will effectively cure any painfully expensive weakness in your case."

. . . . . .

Shippers are constantly calling me in, and together we diagnose and prescribe. The shipper himself can generally help to work out the most practical means of administering the Steelstrap treatment after he has seen how completely Acme equipment meets every need. He has the intimate knowledge of the case, I have the broad experience. The result is an improved package, and consequently a more economical one.

My STRAP-BOOK describes and illustrates many different case histories. Shippers have found this information of great value. And, it is free to all who write for it.

Doc. *Steelstrap*



CONTENTS: Curtain cloth in rolls. SAVED: 28 pounds in weight and 71 cents in cost (including Steelstrap) over the box formerly used —REASON: Acme Steelstrap.

Bound to get there

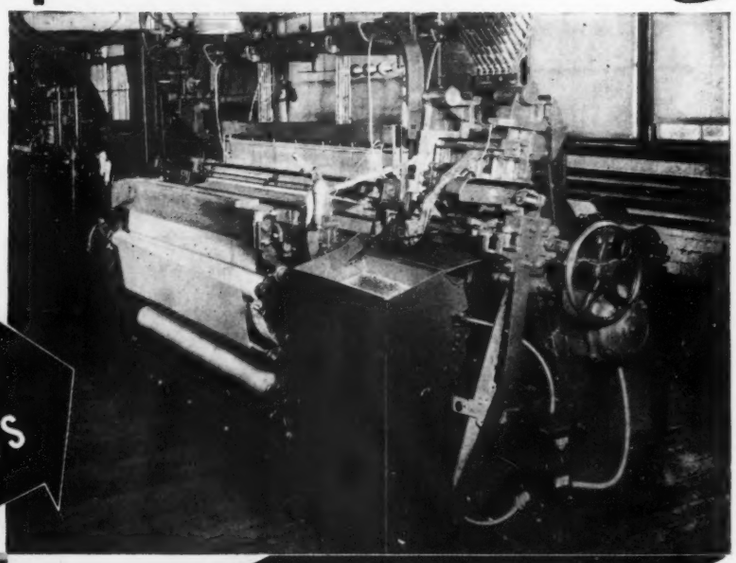
Here's a shipment of cotton textiles—and a neat job of packaging. The contents are tightly compressed, placed in a fibre case, and reinforced with Acme Steelstrap.

Acme Steelstraps

ACME STEEL COMPANY · GENERAL OFFICES: 2847 ARCHER AVE., CHICAGO

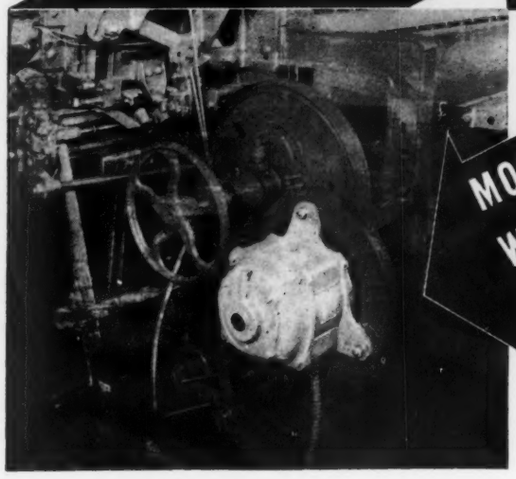
Branches and Sales Offices in Principal Cities

MATCHED for Economical Weaving



Right—*Crompton and Knowles Intermediate Head Supersilk Shuttle-Changer Loom equipped with Westinghouse 3-point Suspension Loom Motor and Control, shown below.*

MODERN LOOMS



MODERN WESTINGHOUSE LOOM DRIVE

Westinghouse 3-point Suspension Loom Motor and Control. The great frame strength and rigidity of this motor particularly fit it for this form of mounting.

● The new Westinghouse Loom Drive is matched in every respect to the latest types of high-speed looms. Installed together, they assure unfailing reliability, and maximum economy in weaving.

Loom Motor—High efficiency and high power factor enable the motors to drive looms at minimum power cost. In addition, great mechanical strength and high overload capacity enable them to withstand the extra stresses of "breaking in" new looms.

Loom-Motor Control—The loom motor starter is designed especially for weave shed service. Its operation is unaffected by vibration, lint, or humidity. It guards the motor against damage from excessive overloads, and can be reset by any operator, safely and quickly, should it trip under excessive load.

For economical weaving, for low power costs, for trouble-free service, specify the Westinghouse Loom Drive. Send the coupon for complete information.

Westinghouse

Quality workmanship guarantees every Westinghouse product

SEND FOR INFORMATION

Westinghouse Electric & Manufacturing Company
Room 2-N East Pittsburgh, Pa.

Please send me a copy of L. 1289-A, Loom Motor Drive.

Name .....

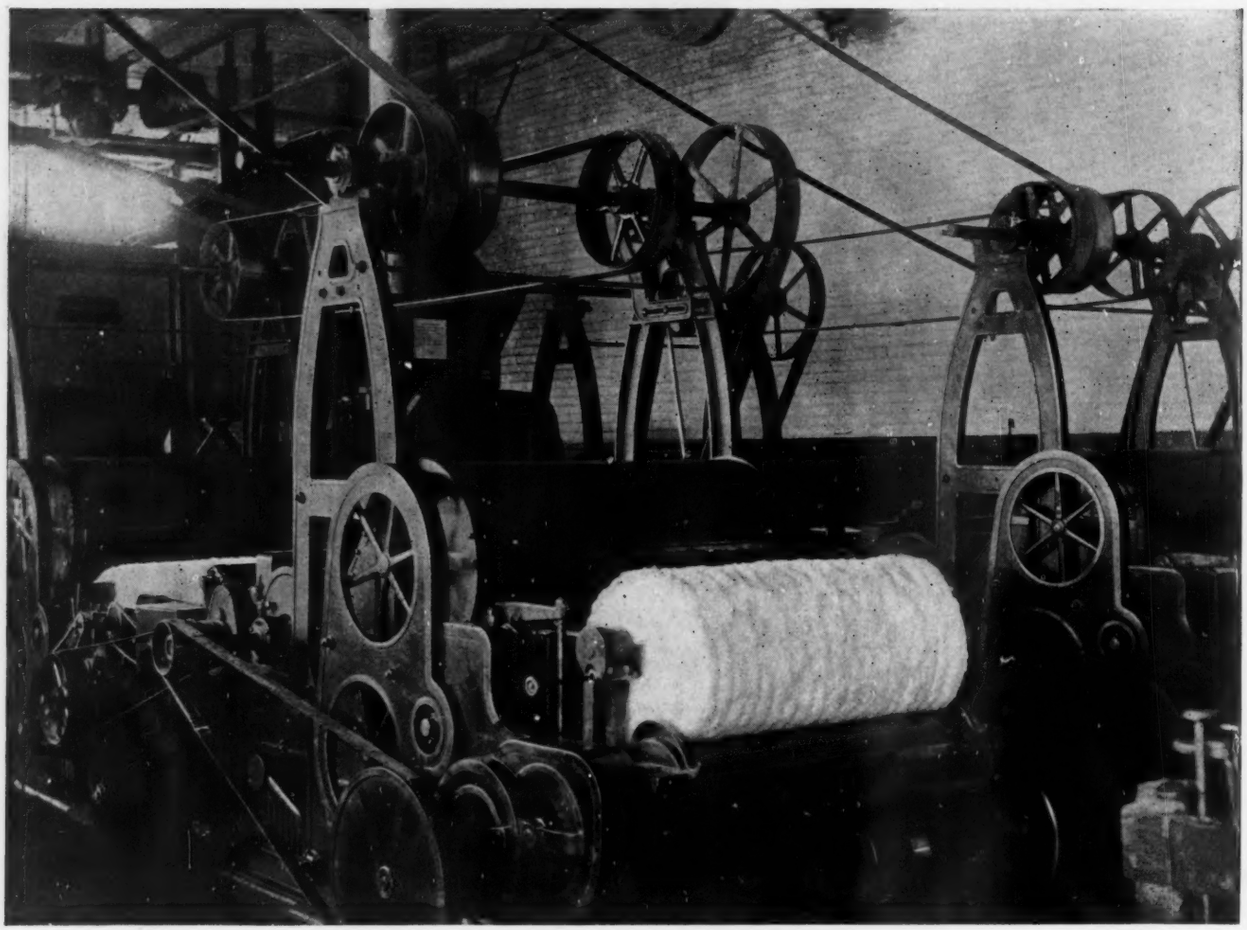
Position .....

Company ..... T 85028

Address C6-34

Aldrich Synchronized Single Process Picking

The only Single Process Picking System which does not overload the evener.



Where all other systems *add* load to the evener, the Aldrich System *takes load off.*

This makes evener laps with fewer losses.

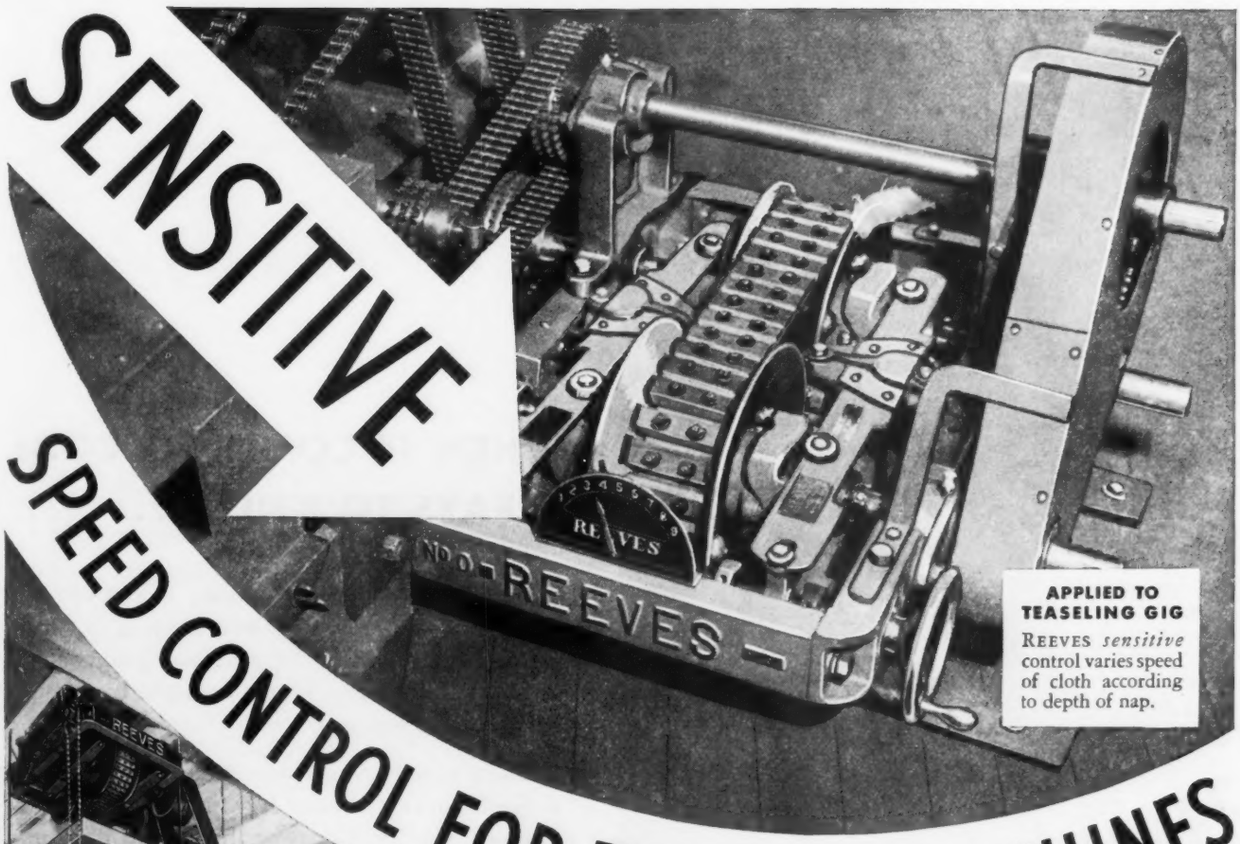
The Aldrich System of Synchronized Single Process Picking has repeatedly proved itself on comparative tests to be the best, and more pickers have been changed to it than to any other system.

Made and Installed by

AldricH MachinE

Greenwood, WorkS South Caroline

SENSITIVE SPEED CONTROL FOR TEXTILE MACHINES

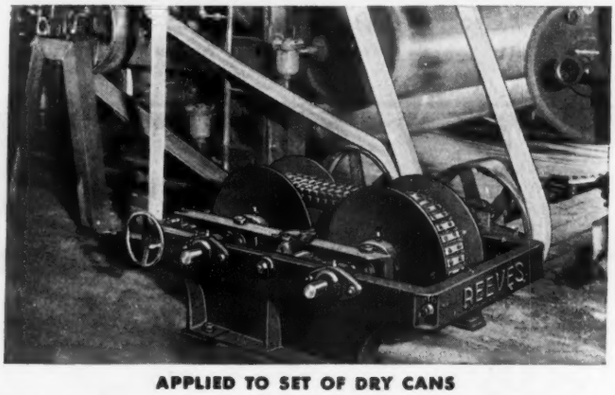


APPLIED TO TEASELING GIG

REEVES *sensitive* control varies speed of cloth according to depth of nap.

APPLIED TO CONTINUOUS DYE MACHINE AND PADDER

Sensitive speed flexibility, provided by the REEVES Transmission, permits *perfect synchronization* in speed and *proper tension* on fabric between all sections of machine.



APPLIED TO SET OF DRY CANS

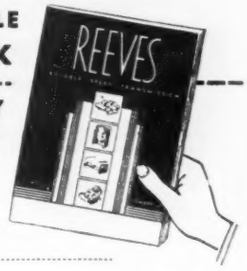
In this drying process, uniformity in finished goods depends on *sensitive* speed regulation to compensate for varying weight and moisture content of fabric.

☆ ☆ It takes SENSITIVE variable speed control to maintain uniformity in textiles—*precision* in speed adjustability—fine gradations of speeds *over a wide range*—immediate, accurate response *while machines are running.*

These requirements have made the REEVES Variable Speed Transmission the textile industry's *approved* method of speed control. Power delivery is always *positive at any speed,* due to the time-tested REEVES Cord V-belt.

With Automatic Control, the REEVES synchronizes machines perfectly—maintains *uniform* speed for goods being processed or wound and maintains *uniform* tension. REEVES Speed Control is available in a complete range of sizes, designs, speed ratios and controls for *correct* and easy application to almost any machine now in use in cotton, wool, silk and rayon manufacturing and finishing. Provided as standard equipment by leading manufacturers of textile machinery.

SEND FOR THIS VALUABLE REFERENCE BOOK



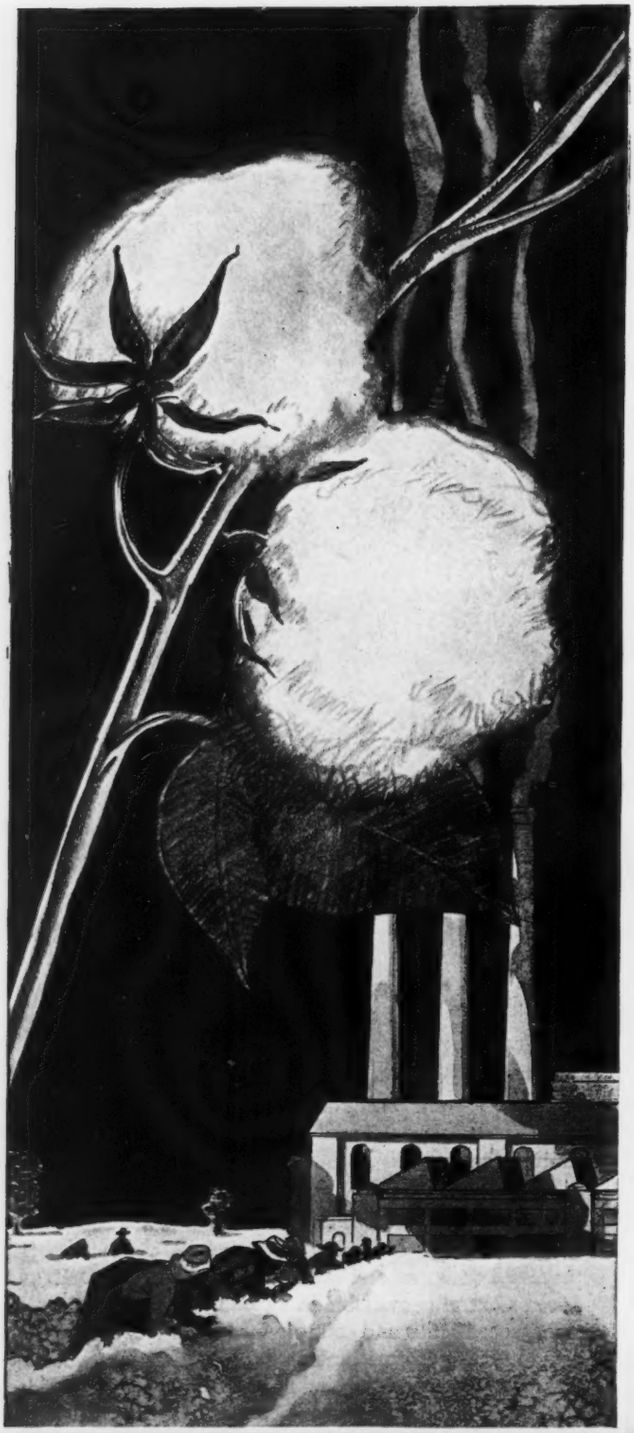
REEVES PULLEY COMPANY
COLUMBUS, INDIANA 6-34

Send, without obligation, Catalog T-99 and special data on applying variable speed to.....

Name.....

Company.....

Address.....



WHEN IT COMES TO COAL IT PAYS TO KNOW...

Do profits go up your chimney in smoke? Do you *know* that the fuel you burn is the one brand best suited to the job? Are you cashing in on the economies made possible by a modernized fuel supply?

If there are any such questions in your mind, a fuel survey made by the engineers of General Coal will answer them. And it is quite likely that the answers will put actual cash in your pocket.

General Coal is playing an important part in the great activity of modernizing industry. Here—for your service—is a centralized source of supply. Here—for your selection—is a complete range of brands and sizes for every fuel requirement. Constantly, these unusual advantages are proving themselves sources of unforeseen saving to forward-looking organizations. Let a General Coal Survey, without obligation to you, make your modernizing plan complete.

GENERAL COAL COMPANY

BOSTON · PHILADELPHIA · CHARLOTTE, N. C.

DETROIT CINCINNATI NEW YORK PITTSBURGH

BUFFALO IRWIN, PA.

GENERAL COAL

Admiralty Coal — The famous New River Smokeless low volatile steam coal

STONEGA — A coal "buy word" in the South for years

GENCO — An excellent stoker fuel

DENDRON RODA — Low ash—high B. T. U. Pulverized Fuels

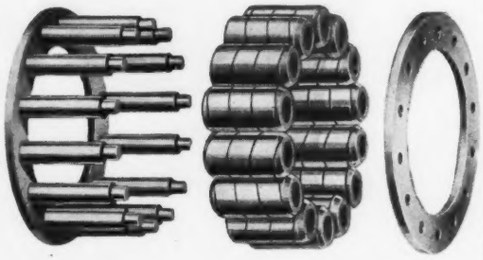
CROZER — A standard Pocahontas smokeless low volatile steam coal

PREMIX — The ideal stoker fuel

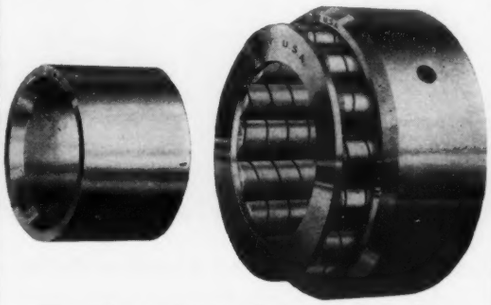
CRITERION COAL — A high volatile steam and general use coal

THIS IS THE BEARING

This is the roller used in a Hyatt bearing—a veritable oil reservoir. The grooves spread the oil back and forth across the rollers and shaft.



The rings, bars and rollers, before assembly, look like this. Note the number of rollers per bearing. Every space is filled. This means more capacity and the strongest cage in any bearing.



The rollers and cage, when riveted together, form a roller assembly which runs in hardened steel races. Outer race shown with assembly partly pulled out. Inner race beside it.

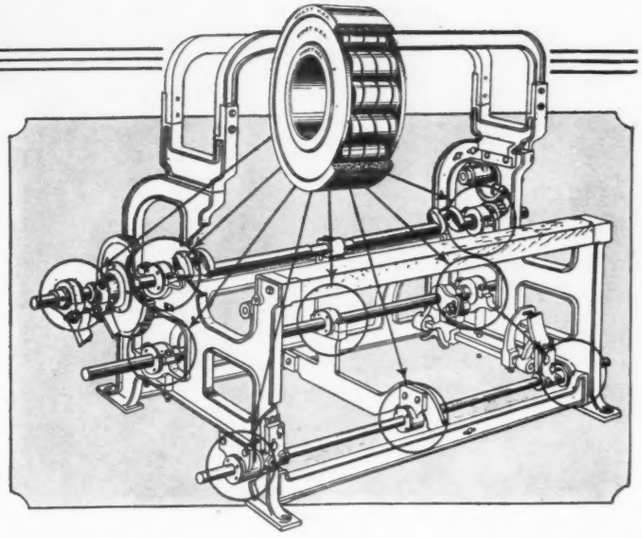
17 years of experience in equipping over 10,000 looms has proved that these bearings in a loom are reasonable in cost, provide a sound return on investment.
Hyatt Roller Bearing Company, P. O. Box 476, Newark, N. J.

Which Modern Minded Mill Men Are Specifying For Their New Looms —

They don't want buggy wheel bearings in their automobiles or their pickers or in their drawing or spinning, slashers or warpers and they don't want them in their looms.

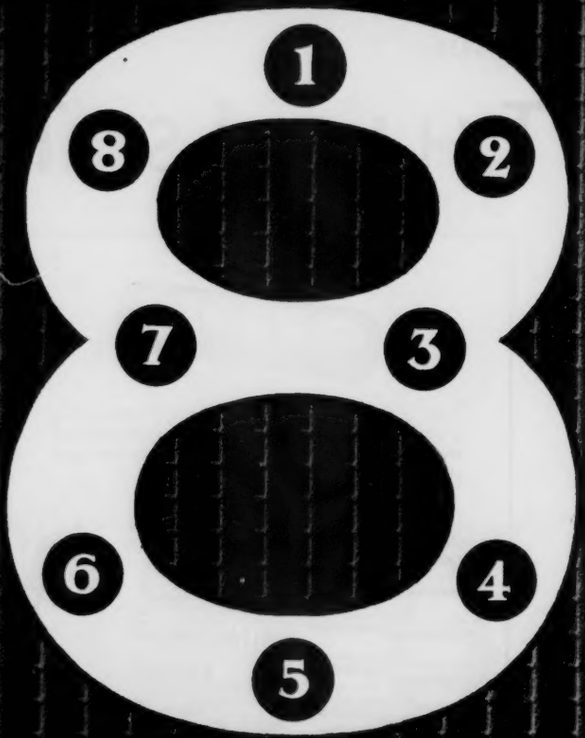
These modern minded men don't want compromises, either. They want a bearing that provides all possible advantages: — Production Increase, Power Saving, Repair Saving, Lubricant Saving, Non-Leaking, Long Accurate Life. Better Quality Cloth.

These shrewd buyers tell their loom builder to include Hyatt Roller Bearings at these positions:
CRANK SHAFT, CAM SHAFT, ROCKER SHAFT, TAKE-UP, DOBBY DRIVE.



HYATT
ROLLER BEARINGS
PRODUCT OF GENERAL MOTORS

VIM TRED LEATHER BELTING gives you



no other belt

1. Grips the pulley like a non-skid tire grips the road. The ribs concentrate the pressure of the belt on the pulley, thus increasing its gripping power from 25% to 40%.

2. Delivers more power and more speed to your machines because it grips the pulleys better and slips less than smooth leather and fabric belts.

3. Hugs the pulley at any speed. VIM TRED is so soft and flexible that it grips the pulley firmly at any speed and delivers a smooth, even flow of power.

4. Runs smoother and without vibration. All sections of the belt are pressed to absolutely uniform thickness by the tremendous pressure used in producing the non-skid tread.

NRA MEMBER U.S. WE DO OUR PART

This background shows the actual size of the VIM TRED surface. You can readily see why it "grips the pulley like a non-skid tire grips the road."

TRY A VIM TRED BELT on any drive in your plant. It will outpull and outperform any other belt you have ever used.

WE WANT YOU TO SEE AND FEEL THIS NEW BELTING

advantages

lt can offer. . . .

5. Blows away dust. As the belt contacts the pulley air is forced out the narrow indentations in tiny jets, thus preventing dust from settling on the surface of the belt or pulley.

6. Stands higher temperatures. VIM TRED not only resists 75° higher temperature than other types of leather but creates less frictional heat in operation.

7. Strongest belt made because it is made of VIM Leather—recognized for over 25 years as the toughest, strongest belting material known.

8. Lasts longer because it eliminates the 2 chief causes of belt wear—SLIPPAGE, which causes frictional heat, and DUST, which grinds away the face of ordinary smooth belts.

E. F. HOUGHTON & CO.
Chicago . . PHILADELPHIA . . Detroit
Branches in 40 American Cities and All Over the World

Send Coupon for ACTUAL SAMPLE→

Please send me without cost

☐ The Sample
The Booklet ☐

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Company .....
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Tear out and mail to E. F. HOUGHTON & CO.
240 W. Somerset Street, Philadelphia, Pa.

Sales Builders for SOUTHERN TEXTILES

New Designs
Reproductions

GJA

LABELS • TICKETS
BANDS • HANG TAGS •
BOLT ENDS • RIDERS • •

JACOBS GRAPHIC ARTS COMPANY
CLINTON___SOUTH CAROLINA

SAVED! —Millions of Dollars for TEXTILE INDUSTRIES

...since introduction of Original Alemite Lubrication System!

POWER SAVINGS

Alemite Lubrication reduces starting torque — reduces power consumption!

MAINTENANCE SAVINGS

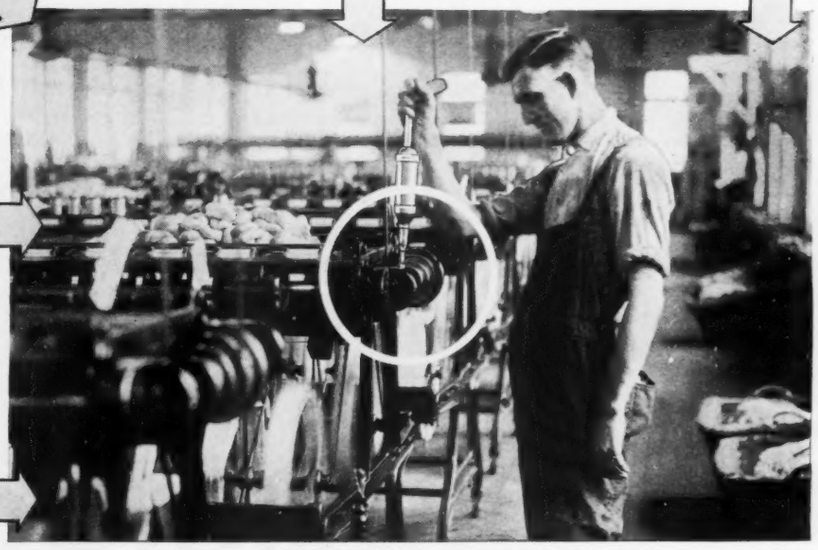
Alemite System provides positive lubrication — reduces breakdowns and repair bills.

LABOR SAVINGS

Takes fewer operations — less time per operation — less time spent in cleaning machinery.

SPOILAGE SAVINGS

The lubricant cannot run out of Alemite Fittings! Nothing to cause spoilage in thread, yarn or fabrics.



LUBRICANT SAVINGS

Lubrication needed only once in 2 weeks with Alemite Lubrication System! 1 lb. of semi-solid lubricant does work of 2 gals. of oil.

And Now the New ALEMITE HYDRAULIC LUBRICATION SYSTEM *Makes It Easier Than Ever to Reduce Production Costs*

Any Lubrication System Quickly and Easily Changed Over at Small Cost
Savings Begin at Once!

NOW—*positive lubrication of all bearing points* CAN BE ASSURED! Just as the original Alemite Lubrication System saved industry millions of dollars . . . so, Alemite's revolutionary new Hydraulic Lubrication System—combined with the famous "barrel-to-bearing" principle—results in amazing additional savings in breakdowns and repairs!

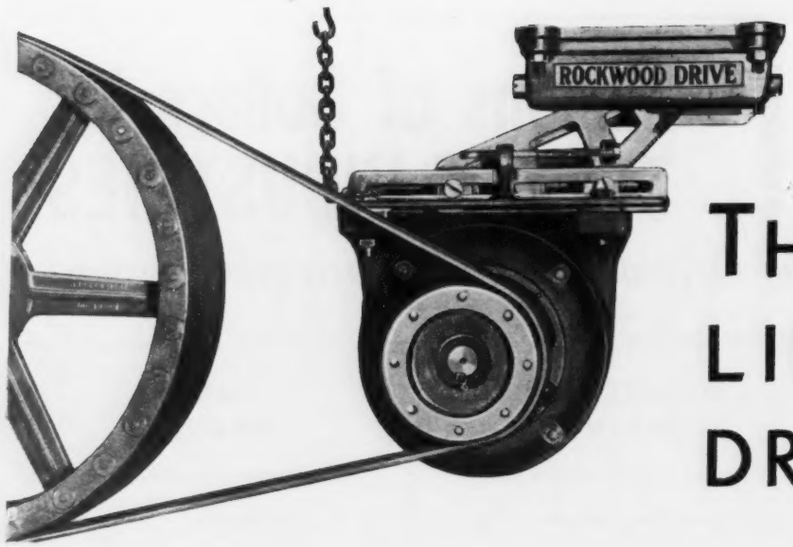
With due respect to all previous lubrication systems, the New Alemite Hydraulic Lubrication System embodies principles so new and practical that you will recognize its advantages at first sight. Alemite Hydraulic Fittings can be quickly installed in machinery now lubricated by oil holes, grease cups, or by previous Alemite systems. It can be serviced with the New Alemite Hydraulic Hand Gun, with which pressures up to 10,000 lbs. per square inch can easily be developed! This tremendous pressure forces out old, worn grease—providing a complete renewal of fresh lubricant. There is no leakage at the fitting. The higher the pressure—the tighter the seal!

You'll want full information about the important savings this marvelous new method of lubrication makes possible. A note from you will bring you the whole story—without obligation.

Your Regular Jobber Can Furnish Alemite Hydraulic Lubrication Equipment

We have extended our jobber policy in order that you may receive even better and more rapid service. For closer contact with an immediate source of supply, call your regular jobber for purchase of such equipment. As always, you are invited to consult us freely regarding Alemite Lubrication.

ALEMITE CORPORATION, Div. of Stewart-Warner Corp'n.
1884 Diversey Parkway Chicago, Illinois



THE IDEAL LINESHAFT DRIVE

IMAGINE a ceiling drive that actually "looks after itself"—that can be *relied upon* to transmit power to the lineshaft *efficiently* and *dependably*, month after month, year after year.

A drive that eliminates incessant tightening and retightening the belt. A drive that will not rob the producing capacity of the driven machines with varying power input. A drive that has *uniform* belt tension — *automatically maintained* — assuring *constant* speed and *constant* power at all times.

Sounds too good to be true, doesn't it? But it IS true, as the many users of ROCKWOOD Ceiling Drives will testify.

In the ROCKWOOD Drive, the pivoted motor becomes the "maintenance man." By simple adjustment at the time of installation, you establish the correct belt tension required by the driven load. That's all you do. The pivoted motor does the rest. The weight of the motor, lightly cradled in the belt, *automatically* keeps the belt at the correct tension throughout the life of the drive. The pivoted motor is "on the job" every minute, maintaining *uniform* belt tension and *uniform* machine output.

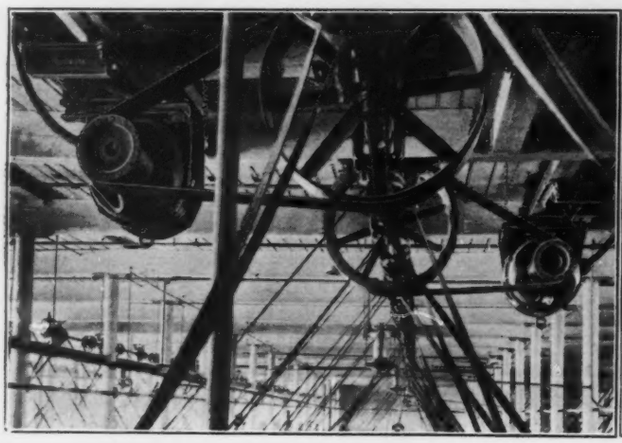
ROCKWOOD engineers will gladly assist you with drive layouts for installation. Write today. Information on ROCKWOOD individual-motor drives for spinning frames and looms also available upon request.

THE ROCKWOOD MANUFACTURING CO., INDIANAPOLIS, INDIANA

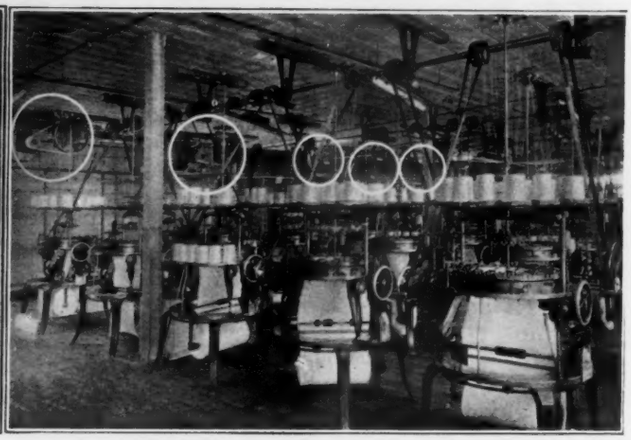
Division of General Fibre Products, Inc.

ROCKWOOD SHORT-CENTER FLAT BELT DRIVE

Two 75 H.P. Ceiling Drives to lineshafts in card room



Five 7½ H.P. Lineshaft Drives to 91 knitting machines



"MY FIGURES SHOW A CONSIDERABLE SAVING IN LINT COTTON NOW."
"SO DO OURS. PRODUCTION IS UP, TOO, SINCE WE'VE HAD THE NEW TEMPERATURE CONTROL IN THE SLASHING PROCESS."

These men are talking of dollars and cents saved—and earned—by a Taylor System of Slasher Control. Do you know how this Control can save your mill money? Let us help you find out.

LET'S LISTEN to other superintendents a minute. "A saving in steam," says one, "is only one feature of the automatic temperature control we use in the slashing process. The control keeps the cylinder temperature so constant that the warps come off with the exact moisture content. It has improved our weaving."

"The Taylor Temperature Control System," adds another, "has enabled us to eliminate soft warps and reduce our hard size. It gives us a uniformly sized warp and has increased our production."

Here are experiences of superintendents of large southern mills. Ask them or many other mill executives to get along now without Taylor automatic temperature control, and we'll wager your answer will be a quick and emphatic "NO!"

They have found that an investment in this proved system of temperature control in the slashing process pays dividends far out of proportion to its cost. It pays them by effecting substantial economies in warp preparation and in weaving. It pays them in profits from sale of higher quality, more uniform goods at the best prices.

A Taylor System automatically assures a better, more uniform size, more efficient warp sizing, and maintenance of correct drying cylinder temperatures. To the Weave Room this brings stronger, more elastic warps. It causes fewer loom stoppages, more efficient work by weavers and machines, less shedding, and increased production of uniformly weighted and finished goods. A Taylor System soon pays for itself—usually in a year, and frequently in less time.

Get this help and this booklet

Remember that this System is not a collection of unrelated temperature instruments, but a unified system of indicating, recording and controlling instruments designed to fit your specific requirements and installed under direct supervision of Taylor engineers.

Let us see how Taylor Control can meet your needs. Let a Taylor Representative see your mill set-up. He will tell you more about this system without placing you under any obligation. Behind him is the entire Taylor Engineering Department to answer your problem. Meanwhile, write for our booklet, "Increasing Loom Production with Decreasing Costs." For the Taylor Man or the booklet, write to sales offices in Atlanta, Boston and Toronto. Or to Taylor Instrument Companies, Rochester, N. Y.

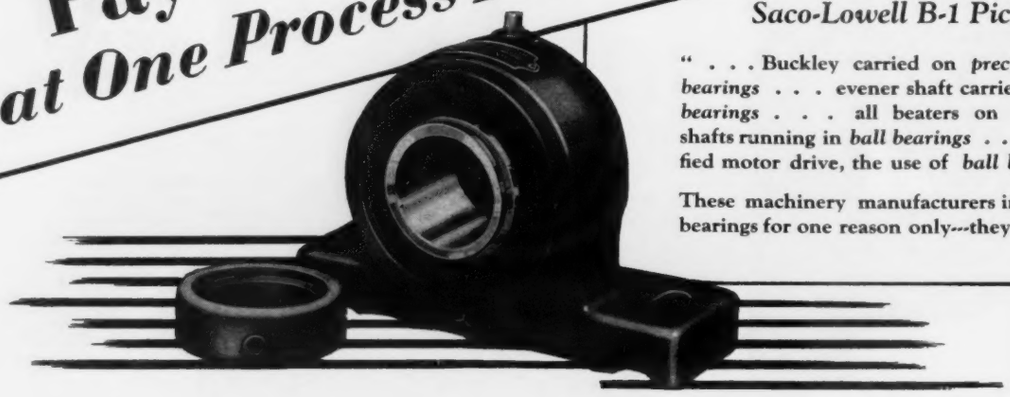
Taylor

Indicating | Recording • Controlling

TEMPERATURE *and* PRESSURE INSTRUMENTS

The name Taylor now identifies our complete line of products, including Tycos instruments.

Do Ball Bearings Pay? Let's Look at One Process Picking



From a recent Whitin Folder---

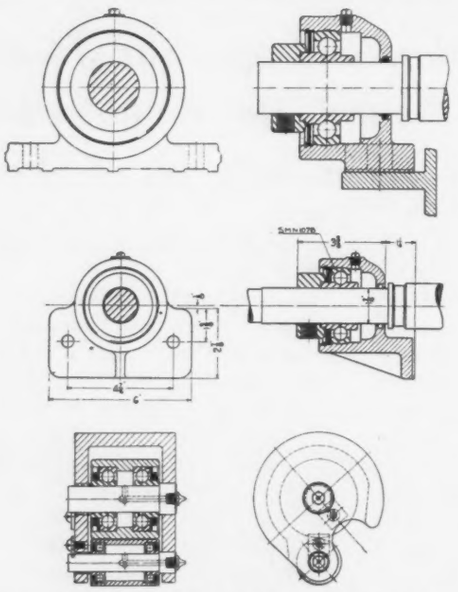
" . . . pin apron drive has *ball bearing* shaft . . . cylinder shaft runs in heavy *over-size ball bearings* . . . cage section fans run in *ball bearings* . . . beater shaft in heavy *over-size ball bearings* . . . lap rack head one piece with *ball bearing* rolls . . . also cone shafts, swing rake shafts, side shafts *ball bearing throughout.*

Description of Saco-Lowell B-1 Picker---

" . . . Buckley carried on *precision ball bearings* . . . evener shaft carried in *ball bearings* . . . all beaters on oversized shafts running in *ball bearings* . . . simplified motor drive, the use of *ball bearings.*"

These machinery manufacturers install ball bearings for one reason only---they pay!

FAFNIR BALL BEARING INSTALLATIONS



3 of the numerous Fafnir Ball Bearing Picker Applications.

SHOW GOOD PROFIT

If your present picking machinery has plain bearings its performance can be materially improved, and its operation rendered less expensive if you will install some or all of the 40 odd applications developed by us expressly for Picking Machinery. And if you plan change-over to one process picking these Fafnir applications are especially effective.

On new picking specify Fafnir Ball Bearings. They cost no more than any good bearing, and give you the advantage of mountings expressly developed for picker service. For complete details consult Fafnir's Special Textile Catalog or one of our engineers.

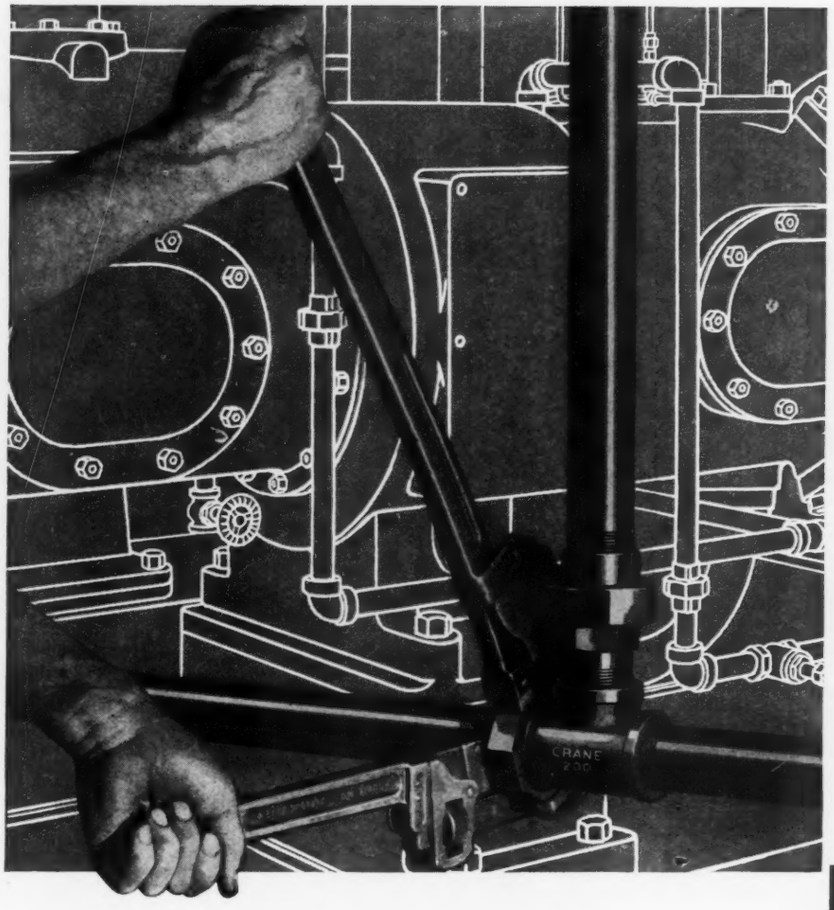
THE FAFNIR BEARING COMPANY, New Britain, Conn.

Representatives also at:

Atlanta, Ga. Charlotte, N. C. Dallas, Tex.
Houston, Tex. Boston, Mass. Birmingham, Ala.

Safeguarding Quality

FAFNIR BALL BEARINGS



THEY CAN "take it"

Chamfered edges for quick pipe alignment

Constant gauging insures uniform size

A durable, tight iron-to-brass seat

NRA Down comes the wrench . . . the entire strain of pulling the pipe line together falls on the union. Often the union must even compensate for slight misalignment.

In service, the union is subjected to the hammer of vibration and the stress of expansion and contraction.

Again, it must stand the abuse of frequent assembly and disassembly.

Yes, a union must be able to "take it" . . . *and Crane unions and union fittings can!*

Crane knowledge of metals, scientific testing and generous proportioning make these unions and union fittings adaptable for use in pipe lines around slashers, dry cans, kiers, traps, regulators, water treaters, dye vats and water heaters. Crane dependability enjoys a large reputation in the textile field.

CRANE

CRANE CO., GENERAL OFFICES: 836 S. MICHIGAN AVE., CHICAGO, ILL.
NEW YORK: 23 W. 44TH ST.
Branches and Sales Offices in One Hundred and Sixty Cities

Your visit to A Century of Progress Exposition should include a trip through the new Crane building.

VALVES, FITTINGS, FABRICATED PIPE, PUMPS, HEATING AND PLUMBING MATERIAL

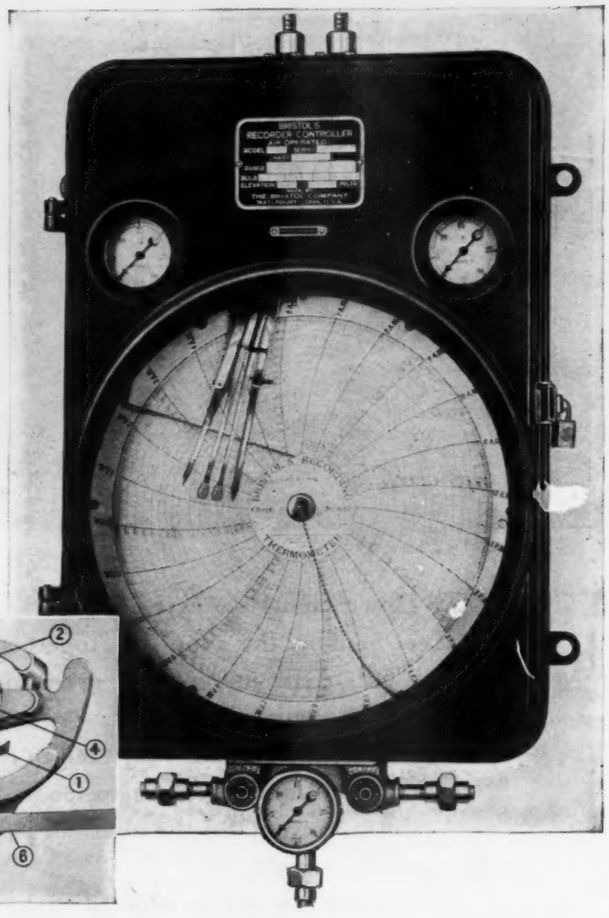
Now it's Good-bye *to shady and streaky goods*

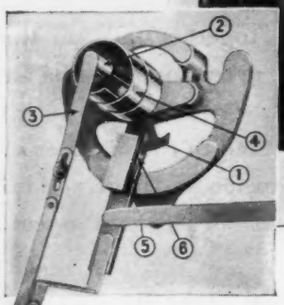
WITH BRISTOL'S Automatic Temperature Control on the job, your dyeing worries are over. Gone are all those bothersome troubles due to incorrect temperatures,—troubles such as shady and streaky goods, matting and felting, run-overs, steam waste, time loss and rehandling.

Gone, too, are all complaints from the field. Now you can give the buyer the same shade today as you gave him yesterday, or will give him tomorrow.

Thanks to the ingenious full floating action of BRISTOL'S Free Vane Recorder Controller, you can hold temperature fluctuations within a fraction of a degree. Although strength and stamina are reflected at every point in the design, still this controller possesses almost incredible sensitivity. It is responsive to the smallest temperature variations,—changes too delicate to actuate other instruments in which the control action experiences friction and restraint and so is unable to function at low ranges.

Ask our nearest Application Engineer what BRISTOL'S Automatic Temperature Control means in the way of strict uniformity and other economies in your own processing.





UNCANNY ACCURACY ASSURES PRECISION CONTROL

A vane (1) is attached to the same shaft (2) as the recording pen arm (3). As the temperature to be controlled varies and actuates the sensitive helical measuring element or flattened metal coiled tube (4), the shaft (2) turns and so causes the vane (1) to pass freely between the two opposing air jets (5) and (6). The discharge of these two nozzles is throttled, and a back pressure is created, which is utilized in effecting control without placing any restraint on the recording and controlling mechanisms.

Photograph shows BRISTOL'S Full Floating Free Vane Air Operated Recorder Controller, Model 5240M. For precision temperature control of dyeing, drying and slasher operations.

THE BRISTOL COMPANY — WATERBURY — CONNECTICUT

Branch Offices: Akron, Birmingham, Boston, Chicago, Detroit, Los Angeles, New York, Philadelphia, Pittsburgh, St. Louis, San Francisco

TRADE MARK

BRISTOL'S

REG. U. S. PAT. OFF.

PIONEERS IN PROCESS CONTROL SINCE 1889

but the inspector rejected one bolt

● Old Tom, the mill inspector, was giving his young assistant a lesson in judging Silks:

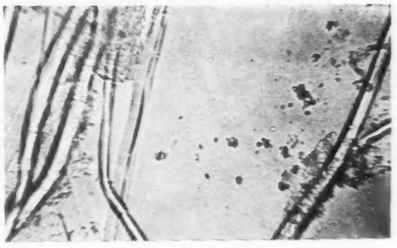
"Take a look here, lad. These two bolts appear exactly alike. But one isn't up to our standards. It was off shade, and didn't have the right feel. It was rejected. That was before we put in Permutit equipment.

"Now look at this other bolt. It's perfect. The new water softener cleared up the whole trouble . . . helped make a good clean job from start to finish."

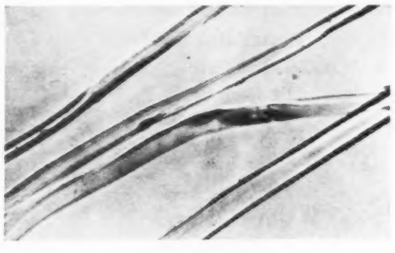
Tom was right. You can't get high quality goods with raw mill water. Untreated water contains dissolved and suspended impurities that cling to fibres and are quite likely to seriously impair the finished fabric.

Mill water must be properly coagulated, filtered, softened, and perhaps even further treated, to protect textile fibres. This is imperative today, with up-to-date patterns, colors and fabrics all requiring improved manufacturing technique.

Investigate Permutit. Let our local engineering staff survey your mill and recommend suitable water treatment. First, send for our free booklet "Reducing Textile Costs and Troubles." It's full of sound information on water treatment for mills. Write The Permutit Company, 330 West 42nd Street, New York, N. Y.

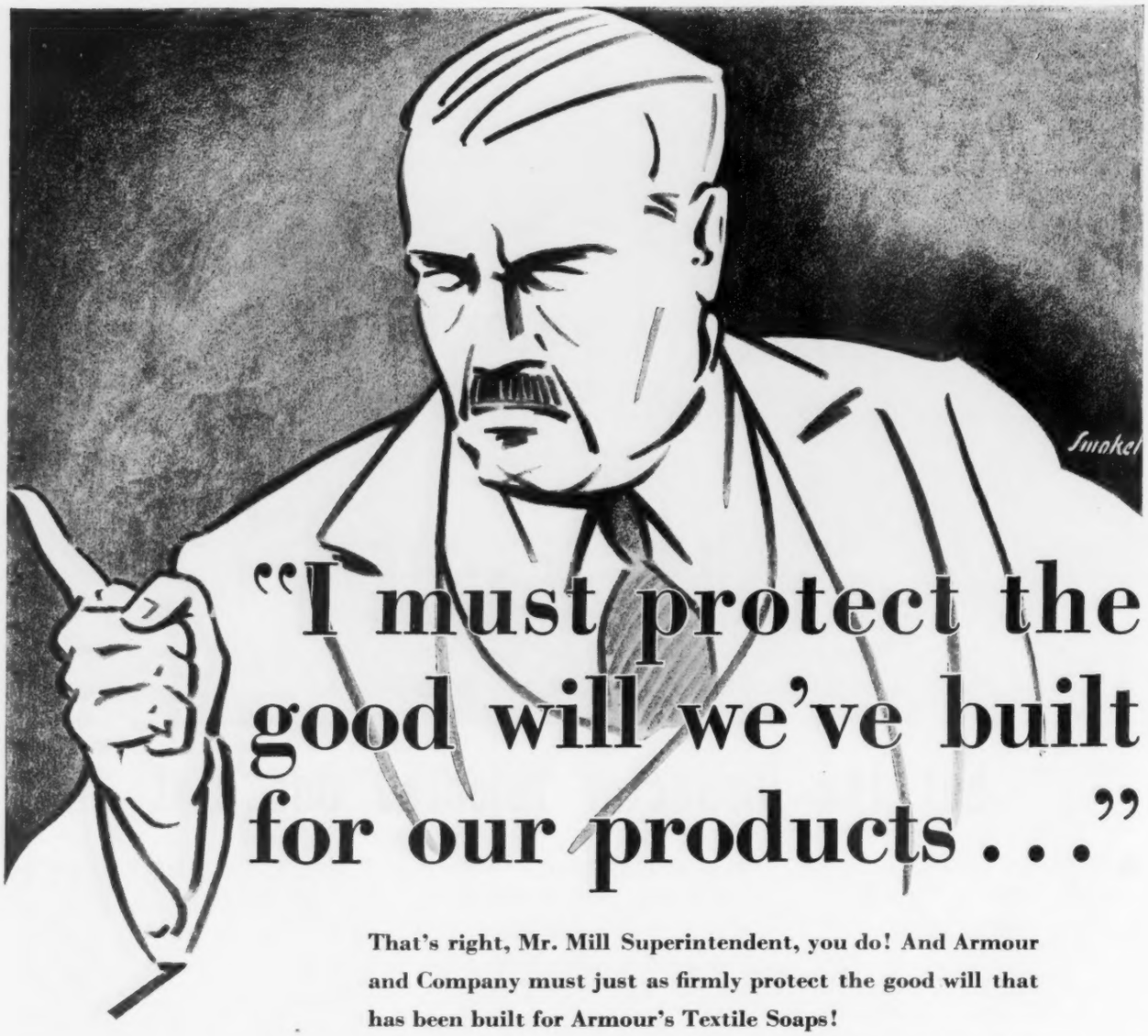


● Clean silk fibres processed with impurities clinging to silk fibres.



● Photomicrograph of raw water properly treated water.

Permutit
Water Treating Equipment



"I must protect the good will we've built for our products . . ."

That's right, Mr. Mill Superintendent, you do! And Armour and Company must just as firmly protect the good will that has been built for Armour's Textile Soaps!

A very important reason for the strict laboratory control to which all Armour soaps are subjected. And an assurance of uniformity of product that is vitally necessary in the satisfactory processing of your goods.

Armour and Company have soaps for every type of processing and other mill uses; a research department manned by capable chemists who will gladly render advice and suggestions in regard to any of your soap problems.

Just a note on your business letterhead will bring this service to you without obligation.

Flint Shredded Chips
Industrial Chips
Pure Palm Chips
Pure Palm Solid
Blended Palm Solid
Topaz Chips
Neutral Olive Chips
Olive Oil Solid
Olive Oil Bars
Olive Fig Soap
Wool Scouring
Flotilla Flakes

INDUSTRIAL SOAP DEPARTMENT
ARMOUR AND COMPANY
1355 W. 31st STREET • CHICAGO, ILLINOIS

The entire output of the Interstate Hosiery Mills, Lansdale, Pa., was handled in three or four SMITH-DRUM Monel Metal Dyeing Machines only a few years ago. Today 21 SMITH-DRUM Monel Metal machines are needed to handle the company's production.

When She Steps Out *in all her FINERY*

...let her thank this SMITH-DRUM installation ...21 Dyeing Machines of Monel Metal!

EXECUTIVES of Interstate Hosiery Mills, makers of "Finery" Silk Stockings, appreciate a good thing when they see it.

Some years ago when they took over the present plant at Lansdale, they found already installed three or four small Smith-Drum rotary hosiery dyeing machines of Monel Metal.

In that same plant today, there are twenty-one!

The newest machine, installed only a few weeks ago, has a capacity of 300 pounds.

Every single machine in the Interstate dyehouse is easy to load and unload; no danger of rough surfaces to catch a single silken thread. Monel Metal is a solid, corrosion-resistant material throughout.

Changes from shade to shade are a matter of minutes. Monel Metal absorbs no dye and requires no boiling out between batches. Moreover, there are no re-dyes due to metallic-caused off shades.

Every textile manufacturer probably knows that Monel Metal cannot possibly rust, that it is highly resistant to corrosion and that it is as strong as steel...qualities that reduce maintenance to a minimum and replacements to the vanishing point.

See the INCO *exhibit of*
Monel Metal Household Appliances
at A Century of Progress, Chicago—1934
Home Planning Hall

News of its *special* usefulness in dyeing operations is spreading fast. Write for "Modernizing the Dyehouse". A book of facts that every textile executive ought to read. Send for it today.

THE INTERNATIONAL NICKEL COMPANY, INC.
67 WALL STREET NEW YORK, N. Y.

Monel Metal

Monel Metal is a registered trademark applied to an alloy containing approximately two-thirds Nickel and one-third copper. Monel Metal is mined, smelted, refined, rolled and marketed solely by International Nickel.

Your PROCESSING EXECUTIVES—

—it will cost you nothing to give them this help — it may cost you considerable to withhold it.

●

Few individuals in business today have more demands on their knowledge, experience, resourcefulness and patience than processing executives in textile plants, whether they be plant chemists, boss dyers, boss finishers, or boss slashers. The reason for this is readily understood. Nothing is static in textiles at present. New developments follow, one on the heels of the other, in rapid succession:—new fabrics, new finishes, and new chemical compounds; and with it all the demand for quick deliveries is more insistent than ever.

The scope of these new developments is beyond the experience of any one individual. Consequently processing executives, when faced with new processing problems, should have the benefit of group experience, or in other words the best consultation service available.

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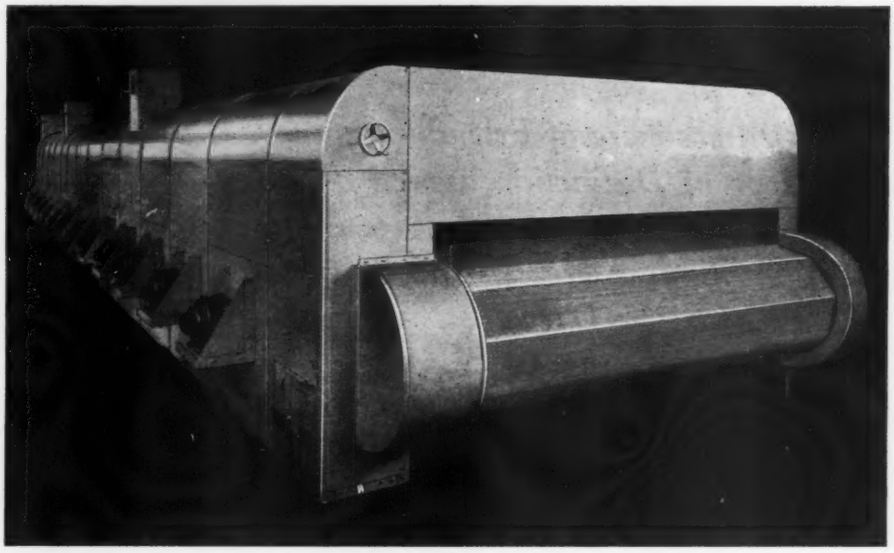

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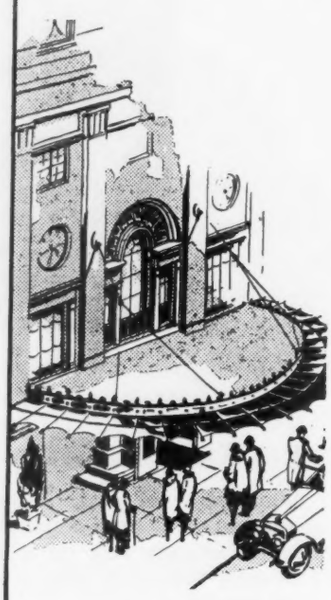

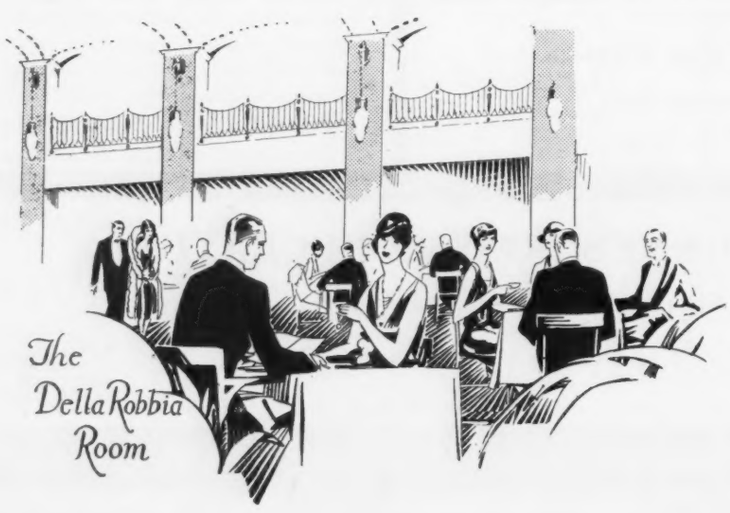

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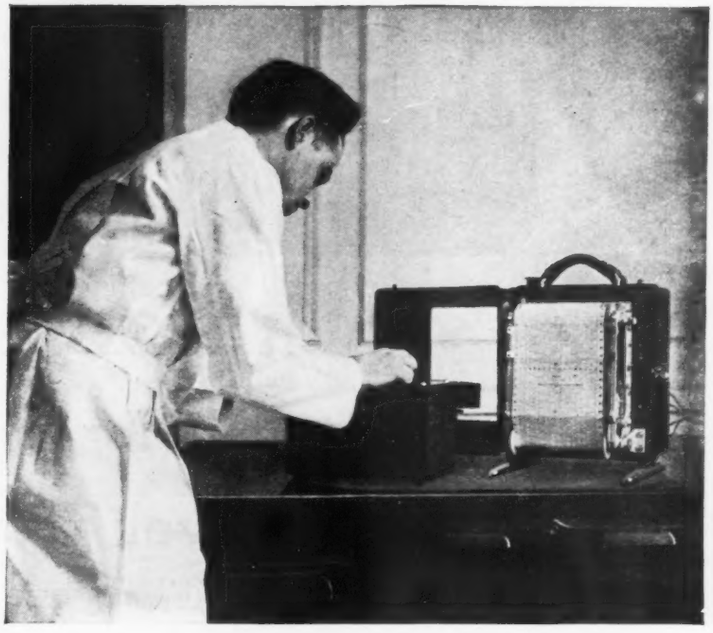

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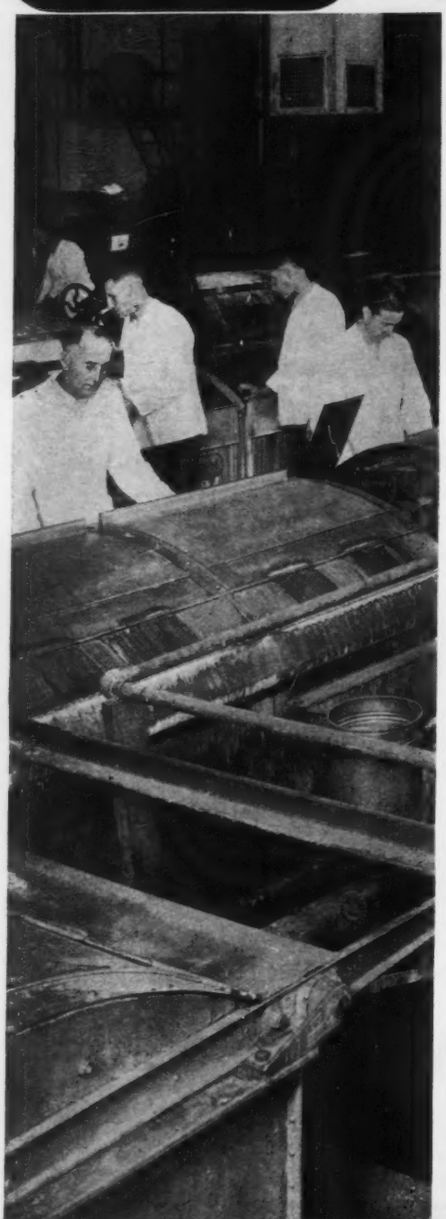

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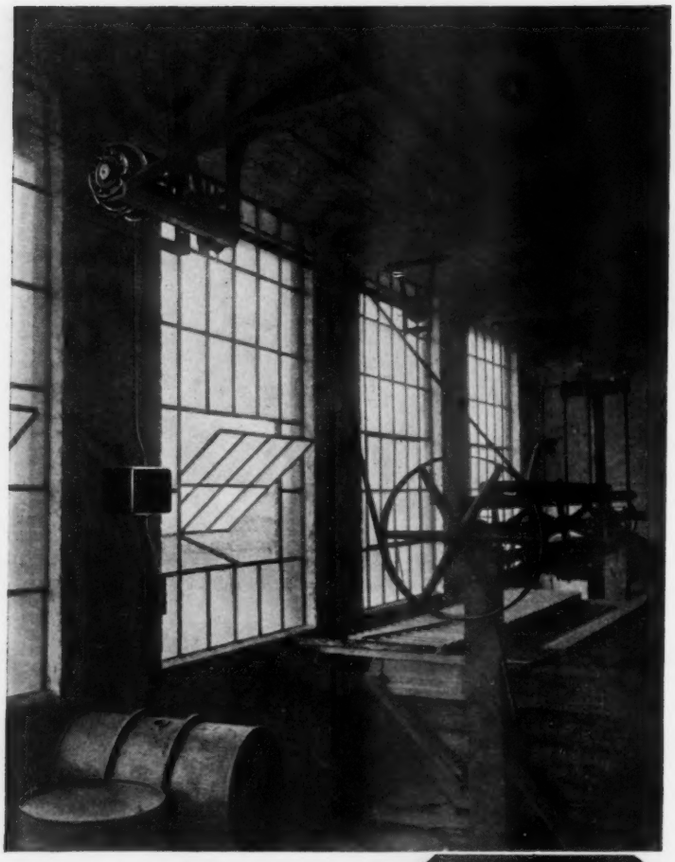

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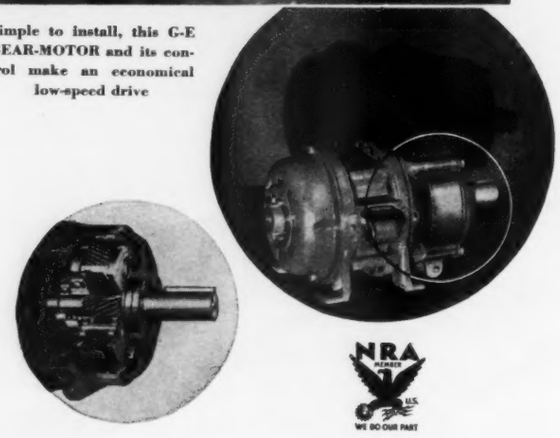

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GENERAL ELECTRIC

Vol. 98

COTTON

No. 6

June, 1934

W. R. C. SMITH, Publisher
T. W. McALLISTER, Editorial Director

ROBERT W. PHILIP, Editor

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Vol. 98
No. 6

COTTON

June,
1934

The Callaway Mills' New Management Program and Vocational School

AN important and progressive change in manufacturing management policy by the Callaway Mills of Georgia is outlined in brief here. Also, the vocational school which this organization is starting for their employees, an especially interesting development, is described . . . . . .

A NEW program of plant operation is being gradually applied in the Callaway Mills group which involves a number of interesting features and some progressively new ideas. One chief feature might be called functional specialization; that is, re-arranging the several major functions of mill operation in such way that each is executed from a centralized point, so that instead of the plant executives being responsible for all the many functions of operating units in the group, they are relieved of practically everything except the chief responsibility of manufacturing.

An unusual and progressive project closely related to the above is the establishment of a modern vocational textile school at LaGrange for the benefit of the mills and their employees.

The Callaway group consists of eleven plants—Hillside, Unity Spinning, Unity Cotton, Elm City, Calumet, Oakleaf, Valway Rug Mills in LaGrange; Manchester at Manchester, Calumet at Hogansville, and Milstead at Milstead; as well as Truline, Inc., at Roanoke, Ala.

The manufacturing at all these plants is under supervision of Fuller E. Callaway, Jr., treasurer, son and namesake of the founder of the Callaway enterprises, and brother of Cason J. Callaway, president.

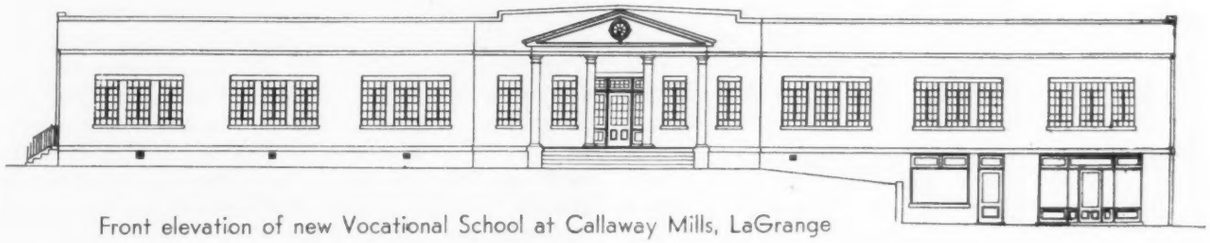
Recently, M. M. Trotter, manager of the Manchester plant, was placed in charge also of the Calumet Hogansville plant and the Milstead plant. The remaining plants—those located at LaGrange and the Truline plant at Roanoke are under direction of P. N. Collier as special assistant to Mr. Callaway on manufacturing.

The revised program of operation, which will be described in part here, is largely applicable at this time to the LaGrange plants. These seven plants employ approximately 3,500 operatives. They are located in Southwest LaGrange and their villages are almost all contiguous.

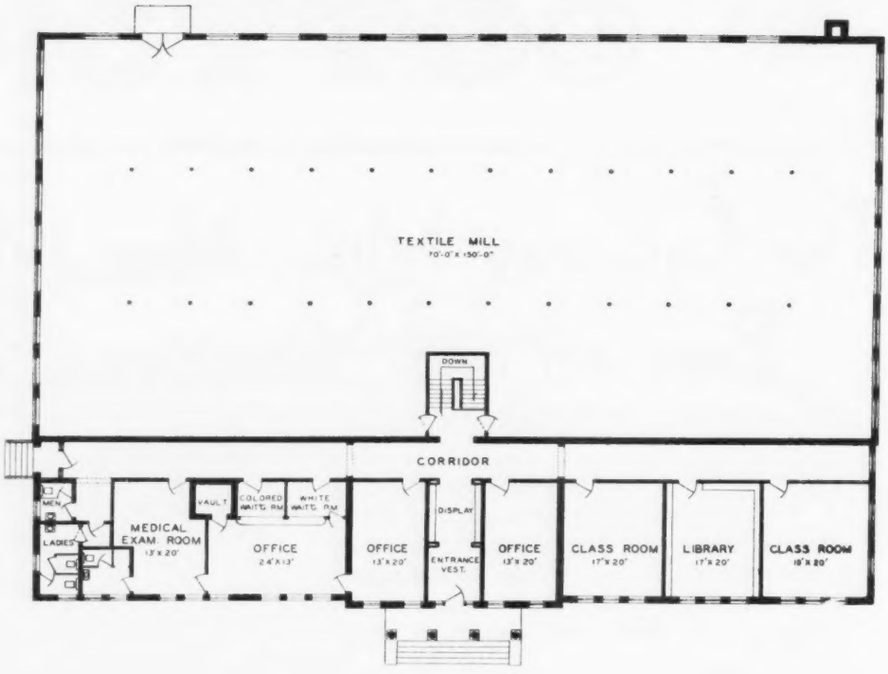
A New Management Policy

For a number of years, in keeping with the policy generally used among cotton mills, each plant manager and/or superintendent in the Callaway organization was charged with the usual duties and responsibilities, running the whole gamut of activities that are usually considered part and parcel of the operating executive's job, the problems of purchasing, employment, village maintenance, public community activities, bookkeeping, etc., being added to the chief job of production with its attendant matters of quality and manufacturing cost.

It is the conception of Mr. Callaway—and the new program of operation takes account of this theory—that in a group of such extent and complexity the work of each individual executive in the group may be advantageously divided along functional lines and each function executed for the entire group, thus freeing the individual operating executive of extraneous detail and leaving him to the discharge of his primary task—that of turning out quality products at minimum cost, with minimum waste, and with as high a labor wage schedule as conditions permit.



Front elevation of new Vocational School at Callaway Mills, LaGrange



Right, plan of main floor of Callaway vocational school. Note offices of school and personnel department and medical examiner and class rooms in the front of the building, all of ample size and conveniently arranged. The greater part of this floor, 70x150 feet, will be the Textile Mill in which complete machinery as used in a mill will be installed and utilized for practical instruction work in the school courses, and also in connection with examination of proficiency of applicants for positions in the mills . .

Several years ago, in keeping with the progressive policy of this organization which has maintained flexibility to stay abreast of developments, certain changes were made which anticipated the more extensive plans now under way. For some time, the cotton, supply and equipment purchasing for all the Callaway plants has been centralized in the general offices at LaGrange. More recently the accounting departments of all the plants were centralized. For more than nine years the organization has maintained one of the best equipped and operated textile testing laboratories in the country.

The New Personnel Department

The first step in the immediate program of functional centralization was the establishment early this year of a personnel department for all the LaGrange mills. Its duties embrace the certification of employees, medical examination of applicants, supervision of villages, repairs, etc.

Boyd N. Ragsdale, formerly vice-president and general manager of the Unity Spinning and Oakleaf plants of the company, has been made personnel director for the entire group, and is in charge of this new personnel department.

The New Vocational School

The Callaway Vocational School, for which a modern building is now being erected, is the next step in the new program. While this is not a part of the functional reorganization, it will play a very definite part in the program of operation. In the first place, it will house the headquarters of the personnel department, under Mr. Ragsdale. The school itself will operate in conjunction with one of the main purposes of that department—the supply of and training of operatives.

The construction cost of the vocational school building was approximately $50,000. It is of modern brick construction and consists of one story and a basement. The front portion of the main floor will contain the offices of the personnel department, class rooms, faculty offices, etc. Adjacent to the personnel offices will be the office of the medical examiner.

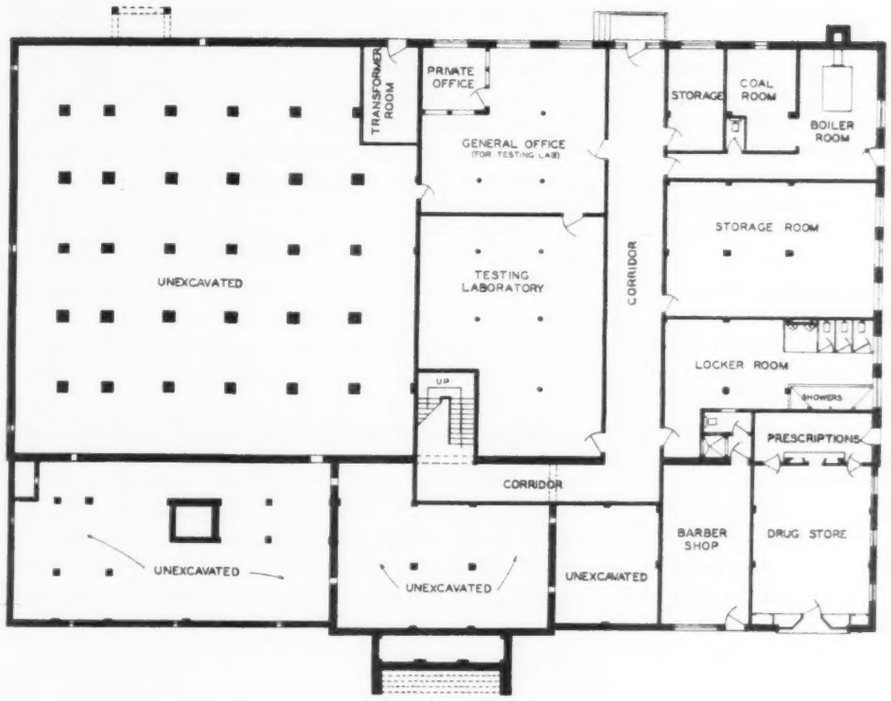
The greater portion of the main floor is to be equipped with up-to-date machinery and will constitute a model mill with all of the customary processes and operations. The space for this department is 70 by 150 feet.

Courses in vocational training, giving the student actual practice on any mill machine, are being developed. The school will have a trained supervisor in charge, and the faculty will consist largely of overseers from the various plants in LaGrange, these serving the school in alternate shifts.

Many advantages are anticipated through the use in the school of actual mill equipment for instruction along vocational lines. The school will be operated as a private enterprise, but any person may apply for entrance to the various courses offered, certain qualifications for admission being required. With actual instruction at the hands of practical men, plus academic training by the regular staff of instructors, intensified and more rapid progress will be possible. Stripped of non-essentials and devoted to a specific purpose, an intensive course of three months is planned, among others already developed or in course of preparation.

It is proposed to make the instruction in mill processes and problems available not only to the usual type of operatives which attend the regular vocational night schools but to others in the organization not generally in manufacturing classes, including bookkeepers, office clerks, members of the sales departments, and to those in other divisions of the business to whom a knowledge of actual mill practice and processes would be useful.

With the shorter hours of work provided by the



Left, plan of basement floor of Callaway vocational school. The central portion of the basement will be devoted to the testing laboratory of the mills, which is to be removed from its original location underneath the main offices of the company to the school building, where it will have an ideal setting as to temperature, insulation, etc. A drug store and barbershop, with locker and shower rooms for students, and the heating plant, complete the lay-out of the basement . . . . .

textile code, operatives already employed may find the school an excellent practical means of broadening their understanding not only of their specific and immediate jobs but of the larger phases of activity carried on in their department and mill, including the work of other jobs and their own relation to them. To those most proficient in the projected preliminary three-months course, it is proposed to offer fellowships for more extensive courses.

The School and the Employment System

The location of the personnel department in the school building facilitates greatly the co-ordination of training and employment. From the employment office, the applicant goes to the physician's office for physical examination; thence to the "mill" part of the school, where a practical test is made of individual proficiency or aptitude in the work for which application is made. Under the eye of a practical overseer, a person might not measure up to the mills' standard for a spinner, but might on the other hand display distinct ability for another type of work. This would be immediately noted, and efficiency would thus be served in preventing at the outset the old "square peg in a round hole" situation.

The school building is located centrally among the several villages of the Callaway plants, making it convenient for all employees, and placing the personnel department in the center of activity.

A part of the basement floor of the school building is given over to those familiar centers of community interest, a barber-shop and a drug store. Another section of the basement is equipped with lockers and showers for the students.

The testing department of the Callaway Mills, originally located in the basement of the general office building, will now be housed in the basement of the new vocational school building. Here it will be furnished with the latest improvements in equipment, and will be provided with that perfect insulation and temperature and humidity control which is so important to its work. The testing department will be, as before, connected through the central telephone switchboard with all of the manufacturing plants so that immediate communication is available with all plant managers regarding materials undergoing testing processes.

The late Fuller E. Callaway, Sr., founder of the Callaway enterprises, was widely known for the declaration that his objective was "making American citizens, and running cotton mills to pay the expenses". His elder son, Cason, caught years ago the vision of his father's ambition, and now Fuller, Jr., as treasurer, continues the program. The establishment of the vocational school—the first of record in the South in its extent of program, plant and equipment for an individual concern—is a demonstration of that philosophy, and provides a means of further developing the thought into action. It furnishes the tools with which the mill's operatives may become more capable in their work, more efficient in their operations, and broader and happier citizens of the community. The personnel department, giving opportunity for selective employment and job assignment, together with physical examinations as a safeguard of health and happiness, is yet another token of the same thought.

The school is a project of unusual character, and its development and usefulness will be a matter of interest to the entire industry.

A very important function which is being centralized under the personnel department is the matter of village and employees' home maintenance and repair. Here again the functional idea is being applied, with the personnel department responsible for village house repairs, street improvements, and

beautification of yards and gardens. Hitherto, separate crews in the several contiguous villages in the group of mills have attended to these maintenance problems, with the result that two crews from different mills might be found working within earshot of each other, both doing the same kind of work on houses almost adjoining but belonging to different villages. Work of this sort has now been centralized for all villages under the direction of Mr. Ragsdale's department. A central carpenter shop, located at the rear of the vocational school, will handle all requisitions for such village work.

Mr. Callaway's program of functional centralization among the LaGrange mills embraces also the operation of a central supply department for the service of these mills. From this department standard supplies will be distributed at regular intervals, and emergency calls will be immediately answered. It is expected this establishment will result in considerable economy; it will prevent duplication of effort among the plants, make possible purchasing in larger quantities, and minimize natural waste and loss.

Another feature of the program of operation is a centralized maintenance department, made up of competent engineers and mechanics, who will take care of the maintenance and repair needs of all the LaGrange plants.

The program briefly outlined here of re-distributing responsibility is based on the advantages which in this modern world come from specialized training and experience being applied to effort requiring that specialization. It is a step away from the out-worn procedure by which the plant executive must be a supervisor of countless details of effort which all require for best results a highly specialized direction. It releases the production man for prime requirements of his job, and it assures an efficient, effective handling of those matters of which he has been relieved.

The details of each phase of the Callaway program would require a story of their own. They are not related here because it is realized that specifically such a plan is limited in application to organizations with a number of plants under one management, and that local conditions demand different details. As a trend in management, however, the program is reported, and it is of obvious interest as a step forward in progressive textile operation.

Textile Industry Mortgage Corporation Is Organized

The Textile Industry Mortgage Corporation, 55 Madison Ave., New York City, has been organized under the laws of Delaware for making loans to industrial companies; it is intended that the loans shall be confined to companies engaged in the textile and allied businesses. The funds to be loaned by the corporation will be procured through the re-pledging with the R. F. C. of mortgages or other obligations taken by the Textile Mortgage Corporation under Circular No. 11 of the Reconstruction Finance Corporation.

Applications for loans will be received upon the following conditions:

1. The applicant must furnish security satisfactory to the Mortgage Corporation and also satisfactory to the R. F. C., with which its obligation will be re-pledged, the security to include a first lien upon the fixed assets of the applicant;

2. The loans to be made for a period of not exceeding three years and to bear interest at the rate of 6% per annum, payable quarterly;

3. Loans to be conditioned upon the applicant agreeing, upon the advance of the loan, to apply not less than 10 per cent of the loan to the purchase of capital stock of the mortgage corporation.

All money loaned by the mortgage corporation will be procured by it from the R. F. C., and the entire capital of the corporation (originally $2,000,000) will be furnished by those companies which procure loans through the mortgage corporation.

As a condition of advancing the funds to be loaned out through the mortgage corporation, the R. F. C., may require that the capital and surplus of the mortgage corporation or a part thereof be invested in United States government bonds and deposited with the R. F. C., as additional security for advances by it to the mortgage corporation; and that no dividends may be paid out by the mortgage corporation without the consent of the R. F. C.

The mortgage corporation has been formed to assist industrial companies, which may be entitled thereto on their balance sheets, to make capital loans. The organizers of the corporation shall receive no profits in connection therewith except such of the organizers as may act as officers or directors of the corporation and may receive salaries or fees. The necessary organization expenses are being paid out of the first capital contributions to the corporation.

Joseph S. Maxwell, vice-president of the New York Trust Company, is president of the corporation; George B. Bacon, vice-president of the Merchants National Bank of Boston, is vice-president. These will, with A. G. Myers, president, Citizens National Bank of Gastonia, N. C., constitute the original board of directors. Snelson Chesney, 55 Madison Ave., New York City, is secretary and treasurer.

Applications for loans should be made in accordance with R. F. C. Circular No. 11, on R. F. C. Form 143, it is stated.

* * *

Summer Textile Classes at M. I. T.

Textile microscopy, textile technical analysis, and textile laboratory are the special summer courses being offered again this year by the Massachusetts Institute of Technology, Cambridge, Mass., under the direction of Professor E. R. Schwarz. The work begins on July 25 and continues for six weeks ending on September 5.

The course in textile microscopy consists of 30 lectures and 45 hours of laboratory. Textile technical analysis consists of 30 lectures given on each week day morning with the exception of Saturday, and will cover the technique of the physical testing of textiles, discussion of methods of report writing, precision of measurements, graphical interpretation of data and elements of fabric and yarn structure. Textile laboratory may be devoted to work in textile technical analysis, or textile microscopy, or both. Registration in this work is limited.

Excellent living facilities are available at moderate cost in the new dormitory group. Groups aggregating 58 men and women from the industry and its allied branches have taken these courses during the regular school year and the opportunity afforded during the summer has always met with gratifying response in the past.

MODERN BEARINGS for the MODERN LOOM

—By—
Frank U. Naughton, Jr.

A MORE open mind toward new improvements is an invaluable asset for any industry. This clear discussion of modern bearings for looms is easily read and understood, and should aid in correcting any lack of attention concerning the introduction of a principle on looms that has been almost universally accepted otherwise.

THE endeavor of this article will be to discuss, in a clear and simple manner, what has been achieved in the application of roller bearings on looms, why cotton looms need modern bearings, and what applications are available.

It is a pretty late date, perhaps, to answer the question: What is an anti-friction bearing? Yet we continually find mill men who do not understand what is meant by coefficient of friction. An anti-friction bearing consists of rollers or balls made of steel, usually alloy steel, which run between steel rings, sleeves or races. Rollers, balls and races are hardened very hard and ground (in better bearings) to close limits of accuracy and precision. One sleeve or race is placed on the shaft to protect it from wear and to form a track for the rollers or balls to run on. The other sleeve or race is mounted in the housing, which is usually of cast-iron. In almost every case this housing and the bearing race in it stand still on or in the machine while the rollers, or balls, revolve with the inner race or sleeve and the shaft.

The complete reason for such a bearing is to change from sliding friction, as exists between a wood, cast-iron, babbitt or bronze bearing and its shaft to rolling motion; in other words, anti-friction bearings put things on wheels. The answer to the question, "which pulls the easiest, a stone-boat or a wagon?" is obvious; when we move houses we jack them up and put them on rollers.

Co-efficient of Friction Defined

Coefficient of friction, in the case of bearings, is a figure which results when we divide the pounds of effort required to push or move an object by the weight of that object. (We assume the object to be on a horizontal plane and the effort applied at right angles to the direction of load.) If it takes a 50-pound pull to move a 500-pound wagon, the coefficient of friction between the axle and the ordinary wheel hub bearing is .10. (We are assuming that we are on a new level concrete Georgia highway so the weight of the wagon is not affected by gravity.)

Now, if we load the wagon down with a couple of bales of cotton, it will pull harder because the pressure between the axle and wheel hub is greater or because the pressure between the plain bearing surfaces is greater. If we equip the wagon wheels with roller bearings the wagon may be started from rest with one-tenth the effort formerly required and the addition of the two bales of cotton will not make the wagon pull any harder. After the wagon is once in motion, the total difference in frictional resistance between the plain and anti-friction bearings is not as great as it was in starting the wagon from rest, if there is at least some grease in the axle.

In like manner a loom equipped with roller bearings will start up easier and continue to run easier because the coefficient of friction in the roller bearing is so much less than in the plain cast-iron bearing. The same is true of pickers, cards, drawing frames, slashers, starch mangles, calenders and dry cans.

In general, increasing the load or pressure on a roller type bearing does not increase the coefficient of friction until we approach the critical point or elastic limit of the steel parts. This is because the friction in an anti-friction bearing is not dependent upon the lubricant as in the case of the plain bearing.

It will be sufficient for most practical men to remember that the coefficient of friction of plain cast-iron bearings will run from .02 to .15, whereas the coefficient of friction of the roller bearing discussed here is about .0016.

Lubrication of Anti-friction Bearings

It might be well to clear up a point which is confusing to some: lubrication of the anti-friction bearing. Lubricant is necessary in the anti-friction bearing, to prevent rust, to lubricate the cages that separate the rollers or balls, to care for the very slight amount of slippage that occurs.

There are several types of anti-friction bearings —all of them have their place in industry and the selection of any one of them to perform a given duty should hinge upon correct engineering principles surrounding the given application. We are discussing here the roller type of anti-friction bearing, because we are discussing the loom primarily, and practically the entire number of anti-friction bearings installed on looms in this country have been roller bearings of the wound helical roller type.

What can roller bearings do for the cotton loom? Fundamentally the same things they will do for a steam shovel, a picker, or an automobile: practically prevent wear; maintain proper relationship of oper-

ating parts of the machine throughout its life—in other words, shaft centers stay the same as when new; save power and cause smooth operation; and save oil and grease.

The crankshaft, bottom shaft, rocker-shaft and connecting rod bearings of the loom are closely related because they form a continuous hook-up of related parts and motions which naturally must be in time if proper loom operation is to result. It should be clear also that once set up properly the distances between shaft centers of crankshaft, bottom shaft and rockershaft and the distance between the crankshaft and lay should remain the same if the loom is to continuously function at its best. Gears are properly in mesh only when they roll on their pitch lines. Transfer of bobbin or shuttle is only properly made when the lay is held correctly in place. Picking is accurate only when the cam strikes the pick ball at the proper moment.

Some General Loom Applications

Bearings are what hold the crankshaft, bottom shaft, and rockershaft in position; if bearings are not correct, how can the mechanical motions which the shafts must perform be correct? Did someone ask, "How about sand tooth gears, and loose running looms 50 years old being in perfect condition?" We wonder if the advocates of sand tooth gears ever gave correctly cut gears a chance to operate properly by mounting their shafts in roller bearings. Cut gears have teeth generated to a shape which demands proper, accurate meshing. Unless meshed properly they bind, chew up and consume power. It is impossible to secure proper meshing of cut gears in sloppy obsolete bearings with too much clearance even when the loom is new.

We have heard of bottom shaft bearings worn so badly that the loom got out of time. We have seen bottom shafts mounted in worn plain bearings jump so that they delivered hammer blows to the teeth on the bottom shaft gears. Worn rockershafts and rockershaft bearings let lays drop down, resulting in improper transfer and even in shuttle smashes. As worn crankshafts and bottom shafts bang around in loose bearings they throw oil or grease and it gets on the cloth being woven. Looms vibrate badly and shake themselves to pieces, causing repair bills to increase. Power consumption is higher than it should be and on Monday morning when all the grease or oil has leaked out beneath the shafts, the looms start up hard and the mill man looks with dismay at the needle on the demand meter creeping up and up.

The present standard cotton loom bearing consists only of cast-iron. The clearance in this bearing, or the space between the bearing and shaft, is over ten thousandths of an inch. This clearance rapidly increases as the shafts and bearings wear; the bearings tend to wear egg-shaped due to the directions of load or force.

Hardened and ground alloy steel rollers and races in a modern bearing have a clearance of about one and one-half thousandths maximum, and maintain that clearance because the parts roll rather than rub or slide. Experience with over 100,000 roller bearings in looms has proven that this type bearing will not wear more than a few ten thousandths of an inch even after years of operation.

Worn plain bearings, causing improper gear meshing and faulty relationship of parts, obviously result in vibration which causes parts dependent upon bearings to break. One southern mill that has operated 100 cotton looms equipped with roller bearings since 1924 states that the repairs for their roller bearing looms cost only one-half as much as those for their plain bearing looms.

The Power Requirements of a Loom

As to power saving, let us first ask how much power is there for the bearings to save. A breakdown of power required for various parts of a loom, as found by W. A. Hanton of England, follows:

Part of Loom	Power Required % of Total
Crank and bottom shafts	20.4
Lay	24.5
Shedding	8.2
Vibrating back rest	0.7
Driving and Picking Motion	7.8
Gearing end motion	7.8
Uptake motion	0.0
Shuttle	30.6

It will be noted that 31 per cent of the power required to drive the loom is consumed by the shuttle; approximately 20 per cent more is probably lost in gearing, change in direction of motions, harnesses, etc., leaving about 50 per cent of the power to be consumed by the bearings throughout the loom —most of it by crankshaft and bottomshaft bearings, and some by the rockershaft, warp, beam gudgeons, etc.

It is not surprising, therefore, that actual power tests made with recording watt meters show a saving of approximately 15 per cent in total power consumed by a roller bearing equipped loom as compared to a plain bearing loom.

Another test of months showed a production increase of 1.7 per cent for a group of roller bearing equipped looms. There are two reasons for this: In the ordinary general purpose motor a slip of four to five per cent usually exists; by reducing power consumption in the loom 15 per cent, the slip or loss is automatically reduced, in other words, the motor is speeded up from 0.6 to 0.75 per cent. And there is considerably less stoppage for repairs. Also less clutch slippage occurs.

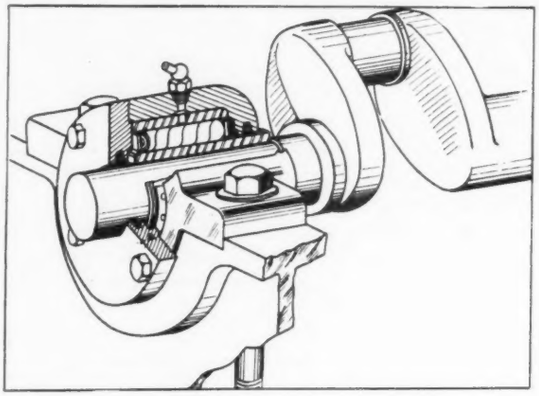
Savings in lubricant are obvious when we consider that three or four lubrications of the roller bearings are made yearly against at least 50 lubrications of the plain cast-iron type of bearings.

Savings through prevention of oil spots are definitely secured since roller bearings are installed in oil-tight housings, and the end plates of the housings fit closely around the shafts and further protection is afforded by generous size felts which prevent all leakage. The value of this feature is immediately

apparent to the mill man, who can place his own valuation upon it.

In rayon weaving, it has been definitely proven that roller bearings, providing a tightly fitted accurate loom, eliminate start marks, bars and stars. It is reasonable to assume that higher quality, more even cotton cloth will result as well. This is important to weavers of shade cloth and shirtings.

A few pioneer mills in the South have had roller bearings on cotton looms for a number of years, and several others have small numbers of roller bearing equipped looms in operation, in the two Caro-

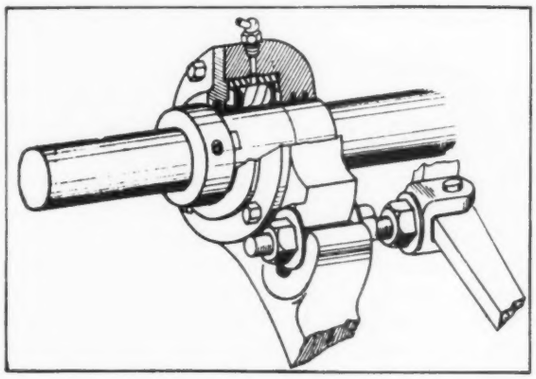


The Loom Crankshaft Bearing

linas and Georgia. There are over 1,000 rayon and silk looms in the South equipped with roller bearings; and this equipment is practically standard on silk, rayon, woolen and worsted and even carpet and plush looms in the North and New England.

The widespread use of roller bearings in all industries and the tremendous volume of these bearings consumed by the automotive and agricultural machinery builders has reduced the cost and trouble of application. Any well equipped shop can readily install them properly.

Let us look into a detailed bearing analysis for



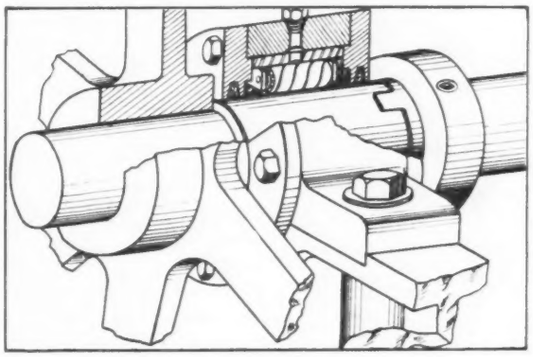
The Crankshaft Outboard Bearing

the so-called "major" bearing positions of the loom. Many mill executives and practically all engineers and mechanics in the mills where weaving is done will be interested in the "why" of loom bearings and how the bearing problems have been solved. Let us start with the crankshaft.

The crankshaft is subject to a great many stresses and pressures which are particularly hard on the bearings. In addition to the forces caused by gear teeth reactions and reversing pressures imposed by the crank throws, terrific shock loads occur when the loom bangs off. All of these pressures, shocks and impacts revert to the bearing. Unless these bearings are properly constructed, wear occurs rapidly and they become "egg-shaped". It is easily seen what this wear does to gears. No longer do the teeth mesh properly or gears roll on their pitch lines. Back lash and rapid tooth wear occur. Gears must be replaced. Maintenance costs increase.

Roller bearings eliminate this wear by substituting true rolling motion for sliding friction. Bearing wear also has a decided effect on the operation of the lay because worn crankshaft bearings impart to it a jerky motion. Worn crankshaft bearings are very difficult to lubricate because the lubricant easily and rapidly leaks out of the bearings and falls on the cloth being woven and on the floor.

The crankshaft outboard bearing is really a steadying bearing to aid the loomside bearing in



The Bottom Shaft Bearing

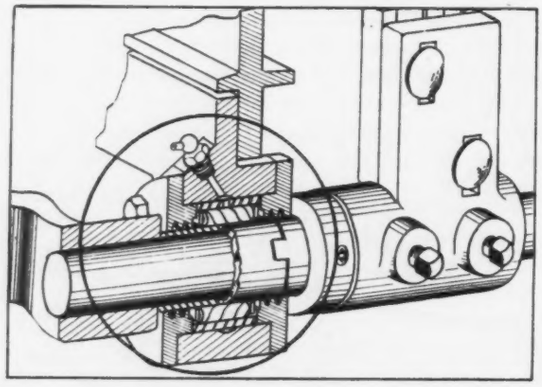
carrying the loads set up by the motor drive and the clutch and many times the bottom shaft drive. Without the outboard bearing the overhung loads would impose a tremendous pressure on the crankshaft bearing in the loomside and cause crankshaft deflection and bending, or else demand the use of a bigger, more expensive crankshaft. Good design, therefore, suggests the use of an outboard bearing, and when this bearing is a roller bearing, it assures that the crankshaft will be rigidly supported for the life of the loom.

The bottom shaft is driven from the crankshaft by means of gears. On the bottom shaft are mounted the picking cams which strike the pick balls and operate the picker stick. Every time the picking cam strikes the pick ball a reaction or blow occurs which causes the bottom shaft to press sharply against its bearings. This sharp pressure in the bearing is of the nature of a hammer blow and is due to the reaction or back pressure caused by the striking of the cam on the pick ball. It is well known that plain bearings cannot withstand for any length of time this constant pounding action. The result is that the shaft wears out or peens out on one side, the side opposite the cam, and undue bearing wear takes place. When roller bearings are used on the bottom shaft this source of wear is eliminated. Wear on the bottom shaft and in plain bearings results in

improper gear meshing—gears no longer roll on their pitch lines—and broken gear teeth result.

In time worn shafts and bearings cause a great deal of trouble through the difficulty of keeping lubricant in the bearings due to increased clearance, commonly called "play" or "slop" between shafts and bearings. Vibration increases and the timing of the loom may be affected. Power requirements increase because parts bind and cannot be properly lubricated.

Mill men everywhere claim that one of the most troublesome bearings in the loom is the rockershaft bearing. This supports the lay which, attached through connecting rods to the crankshaft, is moved



The Rockershaft Bearing

back and forth through a distance of about 15 degrees. This means that the rockershaft makes only a partial revolution in the bearing. The load on the bearing is mostly down, and wear takes place in the bottom of the plain bearing. With the pressure almost steadily in one direction, it is difficult to maintain a film of oil between the shaft and a plain bearing. Thus, with plain bearings rapid wear occurs simultaneously in the rockershaft bearing and on the rockershaft. The result is worn, sloppy rockershaft, which allows the lay to jump, causing marks on the cloth. Furthermore, when the lay drops down in worn bearings the feeler motion is thrown out of adjustment. Likewise trouble is experienced in changing bobbins or in changing shuttles automatically. Crushed or broken shuttles may also result.

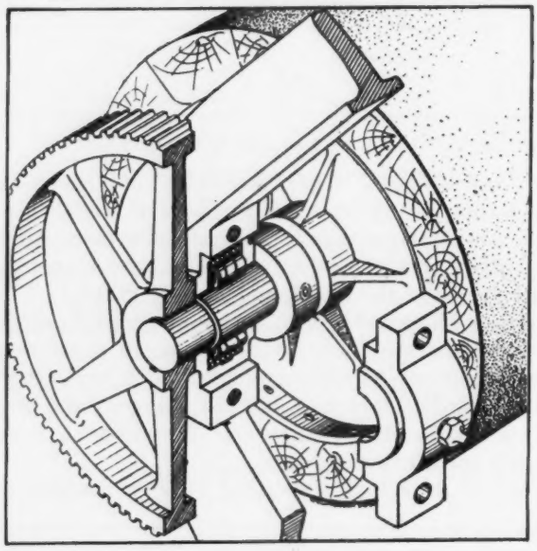
Roller bearings applied to the rockershaft eliminate these difficulties because they are built for this severe service. They banish wear, maintain proper lubrication and hold all parts in their original settings at all times.

The Take-Up Drum. When necessary to "let back", unless the take-up drum moves freely, start marks will appear on the cloth being woven. Roller bearings on drum shaft insure positively that "let back" will occur pick by pick. By their easy rolling motion, roller bearings cause the take-up drum to advance evenly, pick by pick. Maximum pressure may be applied on the take-up drum with no effect on the operation of the take-up.

The Dobby Drive. The dobby is generally used when it is desirable to employ 8 to 25 harnesses. The dobby is driven by means of a gear on the crankshaft. Attached to the dobby gear and off center is an arm—in reality a crank arm. The dobby shaft is short and carries the dobby gear at one end opposite the bearing. The other end of the dobby shaft carries nothing. Thus we have an acute overhung condition, in which the load on the bearing, due to the driving gear, is increased still more by the overhung crank arm.

Since there are no gears or motions mounted on the opposite end of the dobby shaft to balance or offset the pressures of the gear and crank arm, it will be readily seen that in the plain bearing mounting there will be severe pressure at either end of the bearing, which is down on one side and up on the other side. For this reason, the ends of a plain bearing tend to round out or become bell-mouthed. As this wear increases, the dobby gear meshes poorly and the teeth wear rapidly. The crank pin is cramped and wears unduly, causing wear in the crank arm bearing. Proper lubrication becomes impossible and a jerky motion of the dobby drive results.

To meet these unfavorable conditions, two roller bearings are installed of sufficient load carrying ca-



The Take-up Drum Bearing

pacity to care for the pressures exerted by the overhung gear and crank arm. Two bearings are used and are separated as far apart as possible, because in this way the center of greatest load can be more nearly approached and, in a case such as this, there are two centers of greatest pressure.

Many mill men will undoubtedly recognize in the foregoing, points which they have long observed as a result of operating looms. Some have had more trouble from certain bearings than others. Bearings may be applied to only those positions which have given trouble and good results obtained. However, it should be borne in mind that in figuring return on money invested in loom bearings, all of the following items should be taken into consideration: Maintenance or repair savings, power saving, production increase, lubricant saving and better quality.

Acknowledgment.—The illustrations showing the application of roller bearings to various points on the loom, as used in this article, appear through the courtesy of the Hyatt Roller Bearing Company.—The Editor.

Eye to Eye—Handling Textile Industrial Relations under the Code

By Thos. H. Quigley

Chairman, Cotton Textile State Industrial Relations Board of Georgia . . . . .

LIKE all fundamental ideas, the dominant idea underlying Section XVII of the cotton textile code is essentially that of bringing swift and simple industrial justice by drawing the employer and his own employees immediately and closer together.

What could be simpler in its operation, or more contributory to swift justice, than a plan whereby, when either the employer or employee happens to have a complaint against the other, or a controversy shall arise between them, that both may appoint their most capable spokesmen to a mill industrial relations committee to sit down and talk it over in a spirit of mutual respect and mutual give-and-take?

Somehow or other the idea presents a picture especially appealing to the old-fashioned American faith in the ultimate working out of democracy—the American employer on one side of a table, the American workingman on the other.

Once an American writer, familiar with the American employer-foreign employee industrial relations of years ago in the northern states, commenting on the settlement of a momentous English labor disturbance, pointed to the essential simplicity of any controversy "when English eyes look into English eyes." It seems to us that the whole purpose of Section XVII is to draw American eyes to look into American eyes. The eyes on one side of the table may be those of the patrician to the manner born, or those of the rugged individualist who has fought his way up from the bottom. They may look across into the tired patient eyes that expect only a fair day's pay for a fair day's work, or into the alert young eyes that hope some day to look from the opposite side of the table or from the labor councils of the mighty. But anyway, honest American eyes looking into honest American eyes.

The rest of the picture painted by Section XVII—the state boards and the national board—is merely incidental and accessory background for this one dominant simple motif of encouraging the employer to sit down with his own employees in a local mill industrial relations committee. If this local mill committee cannot solve the controversy, they call in the state board with its statewide perspective on industrial relations to make recommendations that will *bring the local committee into agreement.* If the state board cannot thus bring the local committee into agreement, then the national board, with its infinitely wider horizon, is called upon to render a decision that will *bring the local committee into agreement.*

The local mill committee constituting therefore the be-all and end-all of industrial relations as contemplated in the code, it occurs to me that my best contribution to this meeting would be to discuss the employer's part in these mill industrial relations committees.

Encouraging the Committee

It is not difficult to conceive that in almost any mill, no matter how happily it may have been operated in the past, that under the present disturbed conditions differences of opinion, real or imagined but serious none the less, may arise between employer and employee. Further, it is not difficult to conceive that the first instrument of adjustment that the employees may think of is the strike. But if over a period of months there has been built up in the employee a confidence in the efficacy of the mill industrial relations committee to adjust differences promptly and in a manner fair to employee and employer, the last instrument that the employees may think of is the strike.

Mr. Quigley

Therefore, it is most earnestly suggested that it is the far-seeing employer who not only does not discourage referring differences to a committee, but actually encourages it even in regard to patently trivial or unjust complaints.

Fair-minded people can have only deep respect for the employer who has so striven to be so just that the thought of representatives of his employees waiting upon him with a grievance from fellow employees appears to him as a smudge upon his proud industrial relations escutcheon. Let such an employer remember that some of the greatest concerns in this country with the happiest industrial relations history are those who for years have had in effect some such system of industrial relations committees as contemplated under Section XVII.

Then too, one cannot help but pay tribute to the pride of the employer who, when he hears that representatives from his employees are about to wait on him, jumps the gun on the representatives and adjusts the grievance before they arrive. Splendid. The world is a better place for having that kind of an employer. But let such an employer remember that while this system may take care of all just grievances, only in a celestial cotton mill with overseers omnis-

Presented at the annual convention, Cotton Manufacturers Association of Georgia, May 18-19.

cient and operatives angelic will all the complaints be just ones; and that by jumping the gun on the just complaints he has missed priceless opportunities to train the inevitable mill committees how to dispose of the inevitable unjust complaints. And this employer should also remember that when sometime in the future he may be charged, as it is entirely thinkable he may be, with denying to his employees the right of collective bargaining, he will not have recorded in Washington over the signature of his own employees indisputable evidence to the contrary.

And what if a large proportion of the complaints are trivial or absurdly unjust? All the more evidence of the need of employer and employee sitting down and reasoning together. And then too, the more absurd the complaint the easier it is to convince the complainants' representatives of the absurdity. Every such complaint is just one more opportunity for putting over a needed lesson in how employer and employee may see more nearly eye to eye.

Future Safety

Of course there is nothing compulsory about the system set up under the code. Then too, the system can be circumvented by the employer who wishes to do so. Or compliance with the system can be by technically acceptable but spiritually meaningless gestures. But it is well for all of us to remember that no one is smart enough to see even a few years ahead to the labor storms that may assail us unless we here and now, in all good faith, use the means and opportunities at hand to encourage in our employees those attitudes and abilities that will be our future sheet anchors to windward.

Procedure

All this implies that there must be certain fixed fair procedures in the operation of the industrial relations provisions of the code in order for the employers and employees of this vast industry over a considerable period of time to become habituated to them and schooled in the handling of complaints under them. The state board of Georgia has established such procedures based upon the intention of the code as the state board understands the code. The main points of this procedure, as shown in Forms 1 and 2, are readily understandable, and have been distributed widely over the state, and only certain points will be touched upon here. In this state, at least, failure to follow this simple procedure has usually had untoward results and the state board is more and more insistent that this procedure be followed to the letter so that the spirit of fairness which the letter implies may prevail.

Methods of Conducting Meetings

Out of the experiences of the past year the impression is gained that whether or not the results of a mill committee meeting impress employer and employee as fair, depends as much upon the spirit prevailing in the meeting as upon the concrete results accomplished. The employee representative who thinks he is going to get the employer told, who tries to bask in his own importance, or who conceives it his special function to crack down on the employer; the employer who tries to pick childish flaws in the employees' complaint, who tries to maneuver the employee representatives into compromising admissions, who expects to see all the employees' cards without showing any of his own, cannot make a success of the mill committee system.

THIS discussion will tell you more than anything we have seen about the proper functioning of your mill committees under Section XVII of the Cotton-Textile Code. Prepared for Georgia manufacturers, it is applicable to all other mills. It provides the experience of the very efficient Georgia board in the proper carrying out of the full intent and spirit of the code's industrial relations section. We hope every mill executive, superintendent, and overseer, will read it carefully . . . . . .

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The mill committee can arrive precisely nowhere when the employee representatives and the employer representatives lack confidence in the intelligence and fairness of each other when each are in possession of all the facts. Indeed, the first concern of representatives of the employer and the employee should be to discover the facts and then admit them freely, favorable or unfavorable as the facts may be.

In any such meeting, where the employer like MacGregor, sits, is always the head of the table. And the head of the table almost always sets the pattern of conduct for the rest.

Whether or not the employer and employee should introduce witnesses, whether or not the complainants should appear at the meeting, should largely be determined by whether or not the presence of these people (1) will put the committee in possession of additional facts, or (2) shed a new light on old facts, or (3) make all representatives feel that they are dealing and are being dealt with fairly.

It is well in the meeting to write down all the facts about the controversy to which all members of the committee agree. It may be necessary to try several times to get one fact stated in such a way that all can subscribe to it. Then proceed to the statement of the next pertinent fact and so on until the entire committee has reached agreement on as many points as possible.

And then maybe, as often happens in human affairs, it will suddenly be discovered that there are left no contentions on which to differ.

But let us grant that there still may be left, even after many facts have been agreed to, differing contentions as to the controversy. It is suggested that these differing contentions be set down on paper and stated as carefully as the facts were stated, so that all members will not only have their own contentions correctly stated but will thoroughly understand the differing contentions of the other members.

Maybe here again, after getting all the contentions carefully stated, a little change here and a little change

there will remove all the remaining differences and the controversy is settled in a manner doubtless far fairer than any court, or any judge or any state or national board could ever settle it.

Furthermore, by such a settlement of a controversy there has been built up in the minds of the employees a psychology of confidence in the employer and in the ability of both to settle their troubles at home.

Keeping Controversies at Home

It is therefore most earnestly suggested that employer and employees keep and settle their complaints at home, within their own mill committees, without recourse to an outside agency. This will mean mutual give and take, and above all the spirit of tolerant good will that greases the axle of the world; remembering that it is the big man who knows how to win by losing.

Appealing to the State Board

But maybe the members of the mill committee feel that they cannot agree upon a settlement of the difficulty and that they must appeal to the state board to bring them into agreement. Now gentlemen, as you yourselves expect to obtain mercy on Judgment Day, show a bit of it to the poor state board. Remember that the board is composed of three unfortunates, who as a bit of public service, or more probably for their sins, are doing their stretches as members thereof.

Anyway, if it is necessary to appeal to the state board, there should be submitted, with the appeal and signed by all members of the mill committee, a complete statement of the facts upon which all members agree and of the contentions upon which all members do not agree. This joint statement will therefore give the state board the facts in the matter and all the contentions that each side not only has advanced but which each side thereby acknowledges it has considered.

And now a last request: even though the employer members may not wish the matter to be appealed to the state board and the appeal is the idea of the employee members only, the state board asks you to help the employee members with this joint statement of facts and contentions to the end that the state board may speedily assist you and your employees to see eye to eye.

Someone Must Make a Profit

UNTIL our nation swings over to the left far enough to become a fraternity brother of Russia, we must operate it in harmony with the laws of a capitalistic system. We mean that our citizens, whether they sell services or products, must be permitted to make a decent profit. The profit is their reward for putting forth their energies, using initiative and imagination in the development of business. By encouraging them to make a profit they build up businesses that give employment to the millions who lack the creative qualities and the qualities of leadership.

It seems to us that it would be well for all employers to share with the members of their organizations part of a talk given by Calvin Coolidge back in 1916. Fasten these ideas in their minds:

"We are coming to see that we are dependent upon commercial and industrial prosperity, not only for the creation of wealth, but for the solving of the great problem of the distribution of wealth.

"There is just one condition on which men can secure employment and a living, nourishing, profitable wage, for whatever they contribute to the enterprise, be it labor or capital, and that condition is that some one make a profit by it.

"That is the sound basis for the distribution of wealth and the only one. It cannot be done by law, it cannot be done by public ownership, it cannot be done by socialism. When you deny the right to a profit you deny the right of a reward to thrift and industry.

". . . The law that builds up the people is the law that builds up industry. What price could the millions, who have found the inestimable blessings of American citizenship around our great industrial centers, after coming here from lands of oppression, afford to pay to those who organized those industries? Shall we not recognize the great service they have done the cause of humanity? Have we not seen what happens to industry, to transportation, to all commercial activity which we call business when profit fails? Have we not seen the suffering and misery which it entails upon the people?

"Let us recognize the source of these fundamental principles and not hesitate to assert them. Let us frown upon greed and selfishness, but let us also condemn envy and uncharitableness. Let us have done with misunderstandings, let us strive to realize the dreams of democracy by a prosperity of industry that shall mean the prosperity of the people."—*The Howard Way.*

Urge Removal of Processing Tax

Urging that unless the compensatory tax upon rayon and other synthetic fibers provided for under the Agricultural Adjustment Act is soon imposed, that the processing tax be removed from cotton, the Southern Combed Yarn Spinners Association at a meeting held in Gastonia on May 11th, ordered a telegram to that effect sent the Secretary of Agriculture, Henry A. Wallace. This association represents 1,600,000 combed yarn spindles in the South. The Spinners Association together with the Mercerizers Association has for many months been presenting figures showing the necessity of imposing such a tax. The telegram stated, "For months we have anticipated that a compensatory tax would be laid on rayon. We felt we were justified in expecting this by reason of accumulated statistics showing rayon to be highly competitive fiber to cotton. Cotton fabrics made from staple cottons and the growers of long staple cotton are especially affected, and we believe the very life of our industry is seriously threatened. Unless compensatory tax is laid soon we respectfully petition for removal of the cotton processing tax as being only effective relief from present almost intolerable conditions".

The Sulphonated Fatty Alcohols
Their Use in Cotton Piece Goods Finishing

By J. Andrew Clark

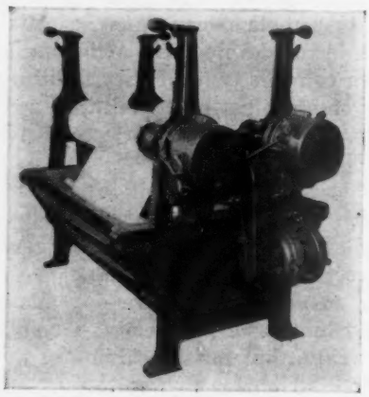
HERE Mr. Clark, in his continued discussion of the raw materials used in the finishing of cotton piece goods, considers those comparatively new members of the family—sulphonated fatty alcohols. Readers desiring to secure the preceding installments in this series are invited to request them from the editorial department . .

THE development of the sulphonated fatty alcohols is one of the more recent contributions of science to textile processing. Designed primarily to overcome the handicap of lime soap formation, these products retain in great measure the desirable properties of soap while possessing few if any of its unfavorable characteristics. With the discovery of sulphonated oil and its application to the textile industry, the improved resistance to lime was pronounced enough in comparison to soap as to give impetus to a long line of research finally culminating in the epochal discovery of Dr. W. Schrauth. Various compounds had been developed, based on the sulphonation of materials other than fatty oils or their derivatives, which, while possessing remarkable wetting-out properties and stability to acids and salts, had no fatty characteristics. Typical of these are the alkyl napthalene sulphonic acids. Blocking of the acid grouping of the fatty acid is employed in other compounds by the formation of esters or acid amides which are then sulphonated. These compounds, however, are not soap-like, yet have exceptionally good wetting and penetrating properties as well as resistance to acids and salts. In fact, they have been recommended for use in finishes containing considerable quantities of Epsom salts. In mixtures with soap, they minimize or entirely prevent the formation of lime soaps when used with hard water. Approximately 16 per cent on the weight of the soap is claimed to be sufficient.

Normann in 1902 hydrogenated unsaturated oils and fats to convert them to saturated products. While this reaction only converted the unsaturated linking to a saturated one by the addition of hydrogen, Schrauth, by modification of this process, was able to produce either saturated or unsaturated fatty alcohols from fats or fatty acids in commercial quantities. It is said that hydrogenation takes place at 200 atmospheres, with a temperature up to 320 degrees C. and in the presence of a catalyst.

The various sulphonated alcohol products show a gradually changing set of characteristics dependent on their original fatty source in much the same manner as soap. In general, those products whose molecules contain the smaller number of carbon atoms show better wetting out and detergent properties at the lower temperatures. At higher temperatures, however, those containing the larger number of carbon atoms show better detergent powers, conditions analagous to the behavior of oleate and stearate soaps. These sulphonated alcohols as technically prepared are mixtures of different alcohols, the proportion and types of which depend on the fat from which they are manufactured. For instance, Brilliant Avirol L-142 is a mixture of cetyl and stearyl sodium sulphonates, obtained from the treatment of commercial stearine. Gardinol CA is mainly oleyl sodium sulphonate obtained from olein while the WA is obtained from coconut oil and consists of essentially 60 per cent sodium lauryl sulphonate, the balance being made up from a number of other sulphonated alcohols.

These compounds are all remarkable for their ability to retain solubility and detergent power in the presence of relatively large amounts of lime, magnesia, salt and acid, properties which enable their use under conditions impossible for soap to perform satisfactorily. The calcium and magnesium compounds are as soluble as the sodium sulphonate, thus enabling the use of hard water for satisfactory scouring or other wet operations without the danger of lime soap formation with its attendant scum. In fact, some Magnesium Gardinol made experimentally was reported after test to scour as satisfactorily as the sodium compound. The resistance of these products to mineral acid is also remarkable in that concentrations of 7 per cent or over are required to decompose them, a property which might lend itself to increasing the efficiency of the grey sour or acid steep through its wetting-out action as also by the



Recent model of machine for jig dyeing . . . .

Courtesy, H. W. Butterworth & Sons Co.

detergent effect obtained when washing out the acid.

In regard to their wetting out action, one authority claims that the Gardinols exceed any other synthetic penetrating agent, including even the alkylated napthalene sulphonic acids.

In use, there are few operations in bleaching and finishing practice which may not be improved to some extent by their use. The present price of the products, however, has been a serious handicap to their general adoption. This has resulted generally in a compromise in that only a part of the soap used in scouring has been replaced by Gardinol such that the total cost remains essentially the same. This has been generally successful with water of moderate hardness and permits scouring without formation of the characteristic lime soap scum.

Desizing with enzymes is facilitated by the addition of penetrating agents generally, Gardinol being excellent in this connection through its additional scouring properties. While the Gardinols have been recommended for kier boiling in amounts of .05 to .1 per cent, and undoubtedly will give excellent boils, especially when used with certain solvents such as Tetraline and Hexalin, the increased cost represents a considerable handicap to its general adoption. When these products are manufactured in America with a probably lower cost, it is possible that these sulphonated alcohols may be widely used in kier boiling, especially in plants having water of moderate hardness.

The Gardinols are unique in that they are not affected by hypochlorites and can be used to advantage in connection with the bleaching operation by assisting penetration of the bleach liquor to yield even bleaching. Additions to the liquor used in shutes should be of especial interest owing to the relatively short time of contact for the cloth.

As a penetrating agent, the sulphonated fatty alcohols are useful in all types of dyeings, while their presence also prevents calcium soap precipitation. Gardinol added to a bath even after the scum has formed, gradually dissolves or disperses it, with a resultant clear froth or suds formation. An instance of this was observed in a reel dyeing machine in which the same formula was supposedly being used in each of two machines supplied with filtered raw water of approximately 100 p.p.m. calcium carbonate hardness. In one, the dyeing was proceeding normally when the other showed considerable scum on the liquor as well as sticking to the water-line of the tub. Investigation showed the omission of Gardinol in the latter. Rather than drop the bath, the usual amount of this material was added as an experiment with gratifying results. In a short time, the scum had entirely disappeared to yield a perfectly satisfactory bath. Two to four ounces per hundred gallons is more than sufficient while in the example above, three ounces was enough for four hundred gallons.

The higher members of the fatty series yield products marketed under the name of Avirols, and while similar to the Gardinols are characterized by more pronounced fatty or wax-like properties. While also possessing wetting-out or penetrating and scouring properties, these are only pronounced at temperatures above 120 degrees F., and accordingly their most promising field is in scouring, dyeing and as a softening agent in finishing.

As a finishing material, these products, which in themselves are neutral, can be used in either slightly acid or alkaline mixes as softeners. Danger from rancidity or odor is eliminated by their use because of their stability to air. Neither do they yellow in storage for the same reason.

The finishes obtained with Avirols withstand light laundering to some extent and can almost be termed semi-permanent. Of interest in this connection is the finishing of rayons, such as taffetas, in the jig during dyeing. Six ounces of Avirol added to the dye-bath gave a finish comparable to one obtained by passing the goods through the nip of a quetsch containing two gallons of sulphonated olive oil to forty gallons. These sulphonated products seem to have the property of exhausting from the bath when cooling to give an effective method of softening.

In Europe, the unsulphonated fatty alcohols are the subject of wide experimental work at present. Attempts are being made to incorporate them with waxes, oils, soaps, etc., to yield various finishing effects, which will undoubtedly find their way to the American market in time. The American market is undoubtedly a fertile and unsophisticated field for the exploitation of these European developments, but unfortunately, the prices demanded, raise the suspicion that the cost of development is to come entirely from this side of the Atlantic, and bears little relation to the actual cost of manufacture. In fact, an analysis of one commercial shipment of a sulphonated fatty alcohol, from abroad, moreover, shows an amazing non-volatile inorganic salt content of approximately 40 per cent and a total ash of 60 per cent.

This article concludes the series by Mr. Clark, covering the basic materials used in the finishing of cotton piece goods. The first, on Water, appeared in the June 1933 issue; the second and third, on Softeners, in July and August 1933; the fourth and fifth, on Starches, Gums and Dextrines, in September and November 1933; the sixth and seventh, on Fillers, etc., in December 1933 and January 1934; the eighth, on Miscellaneous Materials, in March 1934; the ninth, on Rosins, Synthetic Rosins, etc., in April 1934; and the tenth, on Enzymes, in May 1934.—The Editor.

Color Matching and Analysis

The ability of expert dyers and dye testers to distinguish between dyeings that seem identical to the average person has been marveled at, but this ability is of little practical value unless accompanied by the knowledge of how they differ. That this is also true of the ordinary visual spectrophotometer is shown in the May issue of Textile Research by Robert D. Nutting, Textile Foundation fellow. Dr. Nutting in a report demonstrates the ability of the M. I. T. color analyzer to detect color differences imperceptible to the unaided eye.

In the same issue of this magazine, which is the official publication of the U. S. Institute for Textile Research, is the report of R. L. Steinberger, another Textile Foundation fellow, who is working at Harvard, on "Swelling of Cotton and Cellulose Acetate When Exposed to Air at Various Relative Humidities," and a report of the Institute's recent conference on fabric wear resistance and methods of measuring it.

More About Cleaning Looms

Last month we noted some information picked up from various mills relative to blowing off and brushing off looms. Since that time we have made inquiry of a combed broadcloth mill regarding the system used in cleaning looms, and have been advised that brushing off is the only method used, except for a light blowing off of the drop wires over the week-end. Seconds made by high-pressure blowing amounted to more money than the saving by blowing rather than brushing.

To summarize the information gleaned from our inquiries along this line: 1. Mills on comparatively low-priced goods find the expense of brushing off over blowing off is not justified by the value of the seconds eliminated. On higher priced goods the opposite is true.

2. Many methods of blowing off can be improved on considerably with consequent elimination of seconds, such as thorough cleaning of the loom when the beam runs out, a protecting cloth suspended behind the breast beam, etc.

Some Other Revivals

Last month we mentioned also the cycle phenomenon in textile equipment. Since making those notes other equipment has come to mind that has been tried and discarded and is now being used again. We refer to the traversing thread board, separators, elliptical travelers, and the trend to mill-generated power. In these various revived items there have been changes of style and design. Often we hear something condemned for the reason that it was tried many years ago. However, changing conditions and requirements often mean that equipment that had no particular advantage under the old regime shows an improvement in operation under modern conditions.

Why?

We often wonder if the young fellow beginning work in a textile plant has as much difficulty obtaining a satisfactory answer to the question "Why?" as was the case a few years ago. Once when running pickers we asked a second hand why a certain picker made a roaring noise at intervals. "Oh," he replied, "pickers do that". Which sufficed for him. And when we inquired of the mechanic the purpose of the flywheel on the engine the reply was, "Every piece of machinery has a flywheel". We thought such an attitude was not as prevalent as formerly until recently we asked a superintendent the "why?" of some peculiar characteristics of certain yarns. The reply was, "We know that they are there and we know how to allow for them, so what's the use of knowing 'why'?"

THERE IS NO SUBSTITUTE FOR KNOWING "WHY".

Humor?

Which reminds us of an amusing incident that happened in our home town recently. A general science teacher gave her children a number of questions for homework. The next day most of the children returned without the answers. The teachers asked if they hadn't asked help of their parents, and one girl replied that she had tried to get help from her mother by submitting to her the question, "Why does the smoke go up the chimney?" to which her mother responded, "Hush up your foolishness and get back to your lessons". And on an examination just before the close of last year a teacher asked the question, "What caused the depression?" One little boy wrote, "God knows, I don't. Merry Christmas." When his corrected paper was handed back to him the teacher had written, "God gets a hundred, you get zero. Happy New Year".

Labor Unions

The varied reactions of southern mill men to labor union organizers and agitators and to unionized labor have interested us greatly during the last year. We have seen mill executives bitterly opposed to unionization of labor and who met the organizers more than halfway in opposing them; others who were opposed to it but expressed no opinion until called upon; and others who adopted the laissez-faire policy, saying an employee could join the union, the church, the Ku Klux, or anything else, and retain his job so long as he ran his job and conducted himself as a respectable citizen. Our observation of the results of these different attitudes leads us to the conclusion that far less labor trouble has been experienced where the last mentioned attitude obtained. One mill manager, who has been very successful in avoiding any semblance of labor trouble in his large mill, summarized the matter thus: "You don't see stadiums filled with people watching a fine football team go through signal practise. You must have competition and opposition to draw the crowd. It takes those things to keep the game going and to make it interesting. Otherwise the interest soon dies". Which philosophy and illustration seem very sensible to us.

Cockled Yarn

A good many months ago the "How Other Men Manage" department carried a discussion as to the causes of cockled yarn. Lately we have run into an interesting experience along this line. A mill bought second-hand spinning frames that had been run on 1-inch to 1⅛-inch cotton. They were started up this time on 120s, using 1$\frac{7}{16}$-inch and 1⅜-inch cotton. Light middle top rolls were used. Little semi-cockles were found in the yarn, these not being apparent until the spooler guides caught them. They were little larger than neps but were pretty big in proportion to 120s single yarn. They were finally eliminated by putting extra weight on the front top roll. The "why?" of this seems to us to be as follows: The front rolls were not gripping some of the long fibers firmly enough to draft them out of the heavy stock between the middle rolls, so that these fibers would kink back and knot up before being pulled through. The extra weight on the front top roll gave a firmer grip and more even drafting.

On Conventions

"It is not a sign of weakness when you draw lavishly upon other men's brains", is an axiom we read in the columns of this magazine some years ago. That progressive mill men are more and more learning the value of the exchange of information and ideas is one of the hopeful signs for future advancement.

It is interesting to note that without exception, every southern textile men's convention this year has attracted an unprecedented attendance. Much of the interest manifested was of course engendered by the unequalled conditions.

But, whatever the immediate cause, everyone finds these gatherings thoroughly profitable and enjoyable, and learn, incidentally, of the effectiveness of the various textile trade associations; how they are measuring up to the greater responsibilities and opportunities which the new deal has brought to agencies of this nature.

We'll be seeing you the next time the president calls the meeting to order!

Georgia Mill Men Discuss Industrial Relations. . .

Left, W. K. Moore, the new president; right, L. L. Jones, retiring president . . . . .

EVERYONE in the large crowd attending the convention of Georgia cotton manufacturers at Sea Island Beach last month had a profitable and enjoyable time. Industrial relations formed the keynote of the meeting. W. K. Moore of Dalton succeeds Louis L. Jones as president. Continuation of effective activity of the association's office is planned . . . . . .

An ideal convention setting, an unprecedented attendance, a program filled with valuable addresses and reports reflecting a year of useful activity, combined to make the 34th annual convention of the Cotton Manufacturers Association of Georgia, held at the Cloister Hotel, Sea Island Beach, Ga., on Friday and Saturday, May 18 and 19, a complete success.

The conditions imposed upon industry by NRA and other governmental activities immediately created a tremendous opportunity for service on the part of trade associations, together with a responsibility to perform that service. Within its sphere of activity, the Georgia association has measured up to both to an extent not excelled even among similar organizations of larger scope. The reports of officers made at the Sea Island Beach meeting represented largely an account of stewardship excellently discharged during the past year by the organization in line with the new developments in addition to regular activities. There was also stressed the absolute necessity for a continuing and increasing support by the mills of this recognized agency representing them in national and other affairs. That business-like, efficient and effective service by the organization is being recognized was indicated in the report of addition of 450,000 spindles in the state to the association's membership, which now includes the largest percentage of the state's spindles in its history.

The charming and delightful atmosphere and conveniences provided by Georgia's leading seashore resort formed a most suitable and enjoyable meeting place. Along with a constructive series of sessions, which were attended with interest and profit by practically every one there, a full program of entertainment had been arranged in the form of a golf tournament, fishing trips, skeet shooting, and other diversions; while a bridge party, a boat cruise and other entertainment were provided for the unusually large number of ladies who attended.

The key-note of the meeting's program was Industrial Relations under the Textile Code. Its treatment took precedence in the chief speakers—including Whiting Williams, internationally famous author, speaker and student of industrial relations, who brought the textile manufacturers a rich background and experience on this subject, gained by Mr. Williams through intimate contact with industrialists, and workers, by donning the garb of the workingman and living with him. Mr. Williams had just returned from several months in Russia, where he lived among the workers under the new industrial regime there; during the summers of the depression he spent the life of "the workless workman" in this country. A brilliant student, a charming speaker, he brought the Georgia manufacturers much of value and concrete practical use in his discussion of industrial relations.

Another speaker was Thomas H. Quigley, chairman of the Georgia Cotton Textile Industrial Relations Board operating under Section XVII of the Cotton-Textile Code. Because his remarks presented so clear and fundamental a discussion of this phase of NRA in textiles, because his findings and recommendations are equally applicable to industrial relations in all mills under NRA codes in other states as well as in Georgia, his address is reproduced in full on page 47 of this issue of COTTON. It is hoped to present an abstract of Mr. Williams' remarks in our next issue.

Will Moore Succeeds Louis Jones as President

W. K. Moore, president, Crown Cotton Mills and Boylston-Crown Mills, Dalton, Ga., was elected as president of the Association for the coming year, succeeding Louis L. Jones, vice-president and general manager, Canton (Ga.) Cotton Mills, who presided at the meeting last month. John H. Cheatham, president, Georgia-Kincaid Mills, Griffin, Ga., was made vice-president; and W. N. Banks, president, Grantville (Ga.) Hosiery Mills, and McIntosh Mills, Newnan, was made treasurer. Theodore M. Forbes was re-elected secretary and C. T. Kilgore re-named as traffic manager. New directors, to serve for three years each, were named as follows: Landon O. Thomas, president, John P. King Mfg. Co., Augusta; H. O. Ball, vice-president, Pepperton Cotton Mills, Jackson; Julian K. Morrison, president, Southern Brighton Mills, Shannon; and William R. Beldon, manager, Clark Thread Co., Clarkdale. Hatton Lovejoy at first declined re-election as general counsel, but later agreed to serve until a successor might

be named by the new board of directors.

Louis L. Jones, of Canton, in making the annual address of the president, at the first session on Friday morning, presented an intensely practical and informative review of the general activities of the organization during the year. In discussing the need for participation in association activities, he quoted Ex-President Theodore Roosevelt as saying, "Every man owes some of his time to the upbuilding of the industry or profession to which he belongs." Mr. Jones declared that every manufacturer must concern himself more about the industry, about what is going on in the minds of the law-makers, and "we must communicate our views to them as often and as necessary and as forcefully as we know how. * * * I greatly fear that our backwardness in this respect has already operated to our disadvantage."

Jones Discusses the NRA, Etc.

As to the "new set of rules" prepared by Congress for industry, and taking form for textiles in the NIRA and AAA, Mr. Jones said, "there are some splendid advantages derived from the recovery act. It has enabled us to do things for our people that apparently could not have been done at any other time or in any other way and except on a national scale. The benefits under it, I sincerely hope personally, will become permanent. There are benefits held out under the act, I believe, that we have never been able to secure. This may be because we have not been able to work out an acceptable way of obtaining them. But as I see it, there is nothing permitted or prohibited in the textile code, as it now stands, that would be considered a violation of the anti-trust laws or would require a suspension of such laws to permit its successful operation. Therefore, those things prohibited under the anti-trust laws, or that were considered particularly desirable and profitable and used as a bait to lure industry into confidently accepting the terms of the NIRA, have not been incorporated in the code, and we are not permitted to enjoy their benefits. If any interest has been neglected in framing the code, to my mind, it is the interest of the mills." Mr. Jones also called attention to the inequitable conditions imposed upon cotton mills by the processing tax on cotton without suitable compensating taxes on competing fibers.

Discussing the matter of wage differentials between the North and South, as provided in the code, Mr. Jones said, "From the statistics I have seen the difference in cost of living in the North above that in the South ranges from 18 to 32 per cent. The wage differential under the code, as you know, is only $1.00 per week or 8⅓ per cent, when it is readily admitted that the advantage in living in the average southern mill village alone amounts to considerably more than that per operative. It is evident, therefore, that this small wage differential does not permit of as high standard of living for the northern mill employees as for those in the South. We have certain natural advantages in the South that should ever be kept in the foreground, and we should never permit them to be sacrificed."

Mr. Jones called attention to the fact that freight rates from the East to the northern markets are lower than those from the South to the same markets, and freight rates in the South are mile for mile higher than in the North, yet the mile for mile cost per ton is higher in the North. Also that freight rates on cotton are higher from the West to southern mill points than from the West through the ports to eastern mill points. This combination of freight rates on cotton, cloth, etc., he said, together with the wages rates in the South, "certainly operates to our disadvantage and we should earnestly contend for the establishment of an equitable wage differential in the code set-ups, and a fair adjustment of our freight rates." He showed also that while state and local tax rates by eastern mills reflect a decreasing trend, the tax rates of the mills of the South show an increasing trend. He recommended a comparative study of local and state taxes, through the association office.

After the addresses of Mr. Jones, Mr. Quigley and Mr. Williams, the association went into executive session to discuss industrial relations in the state under the leadership of J. A. Mandeville.

THEO. M. FORBES, the efficient secretary of the Cotton Manufacturers Association, who was re-elected at the Sea Island meeting . .

Friday afternoon was devoted to golf and other diversions. A tournament was conducted at the Sea Island golf course under the direction of Norman E. Elsas, of Fulton Bag and Cotton Mills, with prizes which were awarded at the banquet Friday evening.

The annual banquet, at which the visiting ladies were guests, was a most enjoyable occasion. Following the meal, the toastmaster, L. L. Jones, called upon Whiting Williams, who spoke informally as to what his "double-life" among workers had taught him. Hatton Lovejoy of LaGrange followed Mr. Williams by presenting to Mr. Mandeville, on behalf of the mills of the state, a handsome ship's clock as an expression of their appreciation for his loyal services on the state industrial relations board. Then Mr. Mandeville performed the pleasant duty of presenting to Mr. and Mrs. Louis Jones, on behalf of the association, a beautiful silver set of a tray, flower bowl and four candlesticks, as a memento and token of gratitude for the service of Mr. Jones as president of the organization for the past year. The golf prizes were next announced by Mr. Elsas: Floyd W. Jefferson, of New York City, won the blind handicap prize; W. S. Terrell of Atlanta, won low gross with a score of 82; Erwin N. Darrin of Spartanburg

(Continued on page 85.)

Greensboro Meeting Considers Safety, Lubrication and Mill Problems

Reported for COTTON by J. O. Thomas

SAFETY education and textile education were discussed at the regular meeting of one of the newer discussion divisions of the Southern Textile Association in Greensboro last month. An interesting round-table discussion of long draft spinning, cork rolls, and some other mill subjects was also conducted. Danville, Va., gets next meeting of division in fall . . . . . .

WITH a great deal of the time taken with addresses and discussion on textile lubrication and safety in textile plants, the meeting of the Northern North Carolina-Virginia Division of the Southern Textile Association, held at the King Cotton Hotel, Greensboro, N. C., on Saturday, May 26, also discussed briefly a few questions relating to spinning and weaving. It had been planned to discuss some problems of hosiery mills, but so few representatives of this branch of the industry were present that this feature was omitted. A splendid talk was heard on certain aspects of the NRA, by Luther H. Hodges, vice-president and general manager, Carolina Cotton & Woolen Mills Co.

The session opened at 10:00 A. M., with a short address of welcome by Mayor Roger W. Harrison of Greensboro. Culver Batson, of Lynchburg, Va., former chairman of the division and now vice-president of the Southern Textile Association, responded for the group.

H. L. Marlow, of Charlotte, delivered a well prepared and instructive talk on Textile Lubrication. E. G. Padgett, safety director for the N. C. Industrial Commission, gave a helpful talk on Safety in Textile Plants. Both talks were followed by brief discussions. Claude B. Williams, of Fieldale, Va., assistant superintendent, Fieldale Mill, The Carolina Cotton & Woolen Mills Co., conducted the discussion on spinning and weaving.

During a short business session, held just before lunch, J. O. Newton, of the Draper American and Wearwell Sheeting Mills, Draper, N. C., was elected to the executive committee, taking the place of L. V. Andrews, Martinsville, Va., whose term had expired. It was decided to hold the fall meeting of the division at Danville, Va. S. T. Anderson, chairman of the division, presided over the entire session.

Safety in Textile Plants

Mr. Padgett was first called upon for his discussion of safety in textile plants. He brought out that safety is a two-sided proposition: "on the one hand, the removal of physical hazards, as by machine guarding, and on the other, a program of safety education." He stated that in the beginning of safety work, when entire attention was given to removing physical hazards, the desired results were not accomplished—that while mechanical guarding was thoroughly carried out, additional measures were needed, that a safety education program must be carried out, and that "safety education is now considered the first step necessary to make a safe plant." He declared that in his work of inspecting textile plants in North Carolina, he finds the machines well guarded and few physical hazards; but that "we must give more attention to the so-called non-mechanical causes of accidents." Available records, he said, show that only 21 per cent of the accidents occurring in North Carolina mills are chargeable to machinery, the remainder being due to non-mechanical causes, such as falls of persons, stepping on or bumping against objects, handling objects, etc. He emphasized that only by a program of safety education can these accidents be reduced.

S. T. ANDERSON, of Carolina Cotton & Woolen Mills Co., Chairman of the Northern N. C.-Va. division . .

In introducing a safety program, Mr. Padgett said, the management must be sold on its program, that "safety must percolate from the top; unless we have the support of the management we cannot succeed." But the main responsibility is on the overseer, both as to the mechanical and non-mechanical accidents, said the speaker. "Regardless of what some overseer may say to the contrary, he is responsible for the accidents in his department. He is a major supervisor and was given his position because of his knowledge of handling men and his ability to produce at the lowest cost. He has, generally speaking, the power to employ and to discharge; and this power enables him to pick a particular employee for a particular job; for instance, a man mentally alert for a particularly fast machine, or one physically able to do heavy lifting. If in any doubt, he can call for a physical examination. This power also

gives the overseer opportunity to penalize an employee for violation of rules. * * * Why should he squirm when the statement is made that he is responsible for the accidents? If he has an employee who persists in turning out an inferior product, what does he do about it? If he has an employee who persists in some unsafe practice, what should he do?

"Overseers generally raise a question and say they cannot stop accidents when the employee is hurt the first time a rule is violated. If after a careful investigation it is found that the employee was injured the first time he violated a rule, the overseer would be reasonable in raising this question. It is indeed rare, however, when such an investigation discloses this fact. Generally the injured employee has violated the rule time and time again before he suffered an injury. In numerous such cases employees state they had not been called down by their overseers, although no attempt was made to hide their action."

Mr. Padgett said, "Our records show that falls of persons are one of the leading causes of injury, if

L. V. Andrews J. O. Thomas Culver Batson

not the leading cause, in textile mills. Some overseers will say that they cannot walk beside every employee in their departments to see that he or she does not fall. This is of course true. But most falls are caused by poor house-keeping in one form or another. Perhaps the floor is wet, or oil has been allowed to accumulate around machinery; perhaps aisles are not kept free of objects; perhaps the stair treads are worn, or a hundred and one other things. Can the overseer control these? Yes.

"Our records also show that stepping on such objects as needles and nails and running splinters into the feet are the cause of a number of injuries in the mills. This brings up the double protection of good house-keeping and the wearing of suitable shoes. If the house-keeping were what it should be these accidents of course would not occur. On the other hand, if the employees were not allowed to go slipping over the floor in bedroom slippers, or shoes without soles, a large number of these injuries could be prevented."

Mr. Padgett next discussed the proper investigation of accidents, pointing out that carelessness along this line contributes to repetition. "Too many of our investigating bodies," he said, "are satisfied with finding the direct cause of the injury, and to not try to find the real cause of the accident from which the injury resulted." He told of a case in which the investigating body reported an employee being struck in the eye by a small piece of steel. This, he said, was the direct cause of the injury, but not of the accident. The real cause, which was overlooked, was that there was no screen on the bench to prevent chips of casting from flying out.

Another case was of a girl who fell down the stairs, breaking her leg. The report was made that the cause of the injury was "Running down the stairs, contrary to rules." This was true, but "it was also true that the girl was wearing extremely high-heeled shoes; that the stair treads were uneven; that they were wet from a recent scrubbing; and that the steps were poorly illuminated. If a more thorough investigation had not followed the first superficial examination, very likely a second accident would have followed the first, as the enforcing of the no-running rule would not have prevented someone's slipping on the wet and uneven treads."

Mr. Padgett recommended that investigations should be extended to those accidents that cause no injury; that a recent report had showed that for every major injury, there are, on an average, 29 minor injuries and 300 no-injury accidents.

To show that accidents can be prevented, he cited the record of the Revolution Mills at Greensboro, which completed practically 2,000,000 manhours with a total cost for medical care and compensation of around $25.00; and the fact that the Sayles-Biltmore Bleacheries ran a full year without a single lost-time accident.

In closing, Mr. Padgett emphasized the importance of proper and adequate first aid to those injured in the mills.

Culver Batson asked Mr. Padgett if the same committee should always be used in the investigation of accidents. The reply was that this should be done and that the foreman of the department concerned should always be included in the investigating group. Mr. Padgett repeated that all such investigating groups should seek to find the cause of the accident as well as the cause of the injury, these being two entirely different things.

In discussing first aid, Mr. Padgett said that no second dressings should be made by the person in charge of first aid work, this being the work of a physician. Someone asked if the first aid person should handle eye cases, the answer being, "I condemn the practice except in cases where the particle is only sticking to the eyelid and is easily reached." Mr. Padgett thought that anything on the eye itself should be referred to a doctor.

When Chairman Anderson asked for a show of hands of those present whose companies had organized safety programs, a large number answered affirmatively.

Textile Lubrication

The chairman next introduced H. L. Marlow, of Charlotte, for a discussion of lubrication in the textile mill. Mr. Marlow limited his paper to spindle operation, lubrication for anti-friction bearings, electric motors, and diesel engine operation. As to spindle oils, he said these "may have the same general

appearance, and yet their physical characteristics may be entirely different. Their lubrication values can only be determined through actual service, by their ability to reduce wear and power consumption to a minimum. Spindle oils unsuited for operation might show an increased friction load of 2 to 3 watts per spindle; when this loss is applied to several thousand spindles it can readily be appreciated that power consumption is quite an item.

"Broadly speaking, spindle oils should be highly refined products of petroleum base containing no substance which might cause gum formation in the spindle bolster or base. In the selection of the proper viscosity, the size of the ring and traverse, as well as the spindle speed, should be taken into consideration."

As to lubrication of anti-friction bearings, Mr. Marlow emphasized that one of the important items is that they should not be over-lubricated. Good practice, he stated, recommends an oil level not higher than half way up on the bottom balls or rollers in an oil-type bearing; and in a grease type bearing, the bearing should not be filled more than one-third to one-half its displacement. An excessive amount of lubricant in this type of bearing, he said, will cause a generation of heat within the lubricant due to internal friction. Oils for these bearings, he said, should be free from compounds possessing organic or fatty acids.

Mr. Marlow pointed out that most of the anti-friction bearings in the cotton mills are designed for grease lubrication; that in selecting a grease, generally the size of the bearing, the operating temperatures and speed of rotation are the deciding factors. "Such a grease," he said, "should be of a light to medium consistency, according to the speed. It should not show any tendency to harden or decompose, and should be free from fillers or corrosive elements. Sodium base greases are usually more favorably considered for the lubrication of ball or roller bearings than lime base greases, for the reason that they can withstand higher operating temperatures with less danger of separation."

As to "liquid greases", he said the most essential thing is that they be stable emulsions and have no tendency to separate. Many of these lubricants, he said, are used for lubricating top rolls and comb boxes and in his opinion, "the machine manufacturers frown upon these products being used for top rolls where wicks are inserted in the saddles; for the tendency is for the compound to be filtered out by the wicks—the wicks thereby losing their capillarity and keeping the lubricant away from the bearing surface. It is my opinion that the best results would be obtained if straight run highly refined mineral oils were used, unless the wicks were eliminated. For this reason, I believe machine manufacturers have discontinued the installation of wicks unless they are specified."

Mr. Marlow then discussed lubrication of the sleeve type ring-oiled electric motor bearings, recommending a straight run mineral oil, free from any gum forming substance that would tend to clog up the oil ways and prevent a normal circulating of oil through the bearings at all times. On motors using anti-friction bearings, "operating conditions determine whether or not this type of equipment is desirable. There are also a number of bearings equipped with wick feed. Here again we have a condition where, if highly compounded oils or liquid greases are used, the wicks will lose their capillarity, and, if not caught in time, will result in mechanical loss. Generally speaking, an oil ranging in viscosity from 150 to 300 seconds Saybolt at 100 degrees F. will be suitable."

Mr. Marlow concluded with a brief discussion of the lubrication of diesel engines.

J. V. McCombs, Randolph Mills, Franklinville, N. C., asked about making tests of lubricating oils to determine purity of content. Mr. Marlow suggested that "one cannot tell oil by sticking his finger in it," but should have it tested in a reputable laboratory. A member asked the best place to send specimens for testing, Mr. Marlow replying that N. C. State College, among others, was regarded as a good place.

"How often do you oil on an eight-hour schedule?" was asked the meeting by Chairman Anderson. J. A. Simpson, Graham, N. C., replied that he oils twice in 16 hours, always just at the change of the shift. There was some discussion of the kind of oil to use in comb boxes to prevent waste and clogging. Mr. Marlow suggested that the use of straight mineral oil would eliminate a lot of cleaning. W. L. Davis, Proximity Mfg. Co., Greensboro, said he used lighter oil for the comb box, the same as for motor bearings, and regular machine oil for machine bearings.

L. V. Andrews of Martinsville was of the opinion, following some discussion of the proper lubricants to use under different conditions and on different machines, that the average textile man knows little about oils and should call in an engineer and follow his advice. Mr. Marlow informed the group that all new machines, before being passed on to the trade, are always given thorough tests for proper lubrication by all leading lubricating concerns and that they are always in position to give expert advice.

Changing Long Draft Belts

C. B. Williams, the discussion leader, asked, "How and how often do you clean out bands or aprons on long draft spinning?" He stated that his mill had had long draft spinning about six months and planned to start cleaning immediately. J. O. Newton, general foreman of the Draper, N. C., plants, said he cleans about every seven or eight months. To clean, he takes out the middle roller, cleans the flutes with a brush or air, and inside of the aprons with dry air or brush. Another member, with Saco-Lowell single aprons, stated that he cleaned once a year on 10-hour shifts, but on the new arrangement of two eight-hour shifts, cleans every six months. He has his spinners use great care in keeping the journals of the rollers picked off at all times. In the cleaning operation the top rolls are taken off and the steel rolls and aprons removed. New aprons are put on if needed. In reply to a question he said he

usually found about two per cent bad ones. Mr. Anderson asked what he uses in the cleaning processes, and he replied that he uses brushes—a light brush on the leather aprons.

Mr. Williams next asked, "What humidity is best for long draft spinning?" Mr. Davis of Proximity said 70 per cent; another member thought 62; W. J. Jennings, Minneola Mfg. Co., Gibsonville, N. C., preferred 55; J. V. McCombs liked 55 to 58, stating that colored work from dyed raw stock requires less; J. O. Newton said 55.

"What kind of rollers would you recommend for long draft spinning?" was next asked. Mr. Davis of Proximity thought cork rolls fine, but said more ends come down with them. "We like the cork ones best," he said, stating they were a necessity for long draft for colored work. There was then some discussion of the difficulty in keeping calf skin rollers properly cemented. Mr. McCombs knew of a man who has been covering such rollers for years and the covering does not crack or come off.

L. H. Hodges

"How do you determine with any degree of certainty, and no guess work, when spinning rings should be replaced?" was the next question asked by the leader. Mr. McCombs said that he took them off and replaced them when they become wavy and the travelers come off.

Another question asked by Mr. Williams: "How does varying thickness of leather aprons on long draft spinning affect the draft?" This brought up a discussion of cockled yarn. One member set the apron right up to the front roller on new frames. He had less lap-ups and ends ran better. He had had some cockled yarn on colored work, but none on white. Mr. Davis, of Proximity, sets his apron right up to the front roller and gets great help from spreading the pins. The opinion was expressed that if calf skin or cork rolls were used on Casablancas long draft spinning, one would not experience cockled yarn.

The leader asked: "What tolerance is allowed on section beam weights?" One member stated ¼ of one per cent. Mr. Batson said that on 22s yarn his aim was a variation of not more than 2 pounds.

"Has anyone changed from twine to steel heddles, and if so, how does loom stoppage compare?" Mr. Williams asked. D. F. Short, Consolidated Textile Corp., Lynchburg, Va., could not tell much difference. L. V. Andrews had speeded up his looms and had 50 per cent more stoppage on steel than on twine. One-third of stoppage came from knots. G. W. Chaney, Wearwell Sheeting Mill, Draper, N. C., changed to steel heddles several years ago and his looms run better than with twine. Stoppage is greater, however, on higher speeds, but he can't blame the steel heddles for it.

Luther H. Hodges, of Spray, N. C., in speaking at the luncheon which concluded the meeting, after reviewing briefly the history of the NRA, said "Characteristically in this country we have begun to praise or to damn the NRA for everything, whether it has any relationship or not to the act or the administration of the act. There are many letters in the government alphabet besides NRA, but we excuse ourselves for sins of omission and commission and hide behind the skirts of NRA, or The Code.

Some Effects of NRA on Business

"We should, on the other hand think straight and constructively and render unto NRA the things that belong to NRA and unto other agencies and groups the things that belong to them. The NRA has burden enough to stand without suffering the further burden of loose thinking and lazy references. My own opinion is that the NRA is fundamentally O. K. and it has done more in a year than any like agency in a decade, and more has been done under this act and its administration for workers and industry than has been accomplished in a quarter of a century under any other auspices. Most of this has been done voluntarily by industry with government advice, assistance and supervision."

Mr. Hodges summed up briefly the purposes and objectives of the NRA as (1) The sponsorship of self-government in business; (2) The reduction of unemployment; (3) Improved standards for labor; (4) Increased wage payments; (5) Increased purchasing power.

"Our trouble now," Mr. Hodges said, "is caused by the bitter criticism of prejudiced groups: public, industrial, political and labor.

"The public group is composed of extremists or socialistic persons who feel that the NRA is too business-like and too effective, and they consider it outrageous that most of the industries are trying to make a profit.

"The industrial group of critics is small and consists mainly of those who prefer to outsmart the other fellow through low prices, low wages and inside deals and represents the same class that made our industries so rotten and so unsuccessful prior to the NRA. This group wants no control, no co-operation.

"The political group is represented by the standpatters, or those of a political faith and political ideal, opposite from the present administration . . . . . who are unwilling for the people as a whole to have a new deal.

"The labor group is composed of over-zealous leaders who are greedy for purse and power and who fail to realize that labor's status and labor's condition have been tremendously improved, and will be improved still further if the NRA set-up is given a fair, patient and sportsmanlike trial.

"If the NRA would be satisfied with having done a good job; would hold to three basic principles of minimum wage, maximum hours and fair competition; would leave off a million details, especially where small businesses are concerned; would curtail regimentation, but encourage co-operation in industry itself; it would increase in popularity and render a marvelous service to a grateful nation. Personally, I believe it will yet do these very things."

Corn Leads Carding Division in an Interesting Discussion Meeting

Reported for COTTON by G. H. Dunlap

THIS report, made for COTTON by a member of the Clemson textile faculty, gives the discussion on card room subjects occurring at the Carding Division meeting in Greenville last month. Opening and blending, one-process picking troubles, oil spraying, doffer speeds, and the roving tester were among the timely topics discussed.

AN interesting meeting of the Carding Division of the Southern Textile Association was held in the Parker High School auditorium, Greenville, S. C., on Saturday, May 19. A representative group was present and took part in the discussion of subjects relating to card room practice, which was directed by J. O. Corn, superintendent, Pacific Mills, Columbia, S. C., who is chairman of the division.

H. H. Iler, of the Union Bleachery, Greenville, and president of the Association, welcomed the group to Greenville. The association furnished cold drinks that were thoroughly enjoyed by the visitors during a short recess. Before the discussion was begun, a fitting tribute was paid to the late W. F. Davis, superintendent, Brandon Mills, Greenville, S. C., who succumbed to an attack of heart trouble early Friday evening, May 18.

An important announcement of special interest to textile men was made by L. R. Booker, of Clemson College, who announced that the textile school of Clemson will offer their equipment and laboratory for any research that the mills may desire to conduct during the summer; those interested should correspond with H. H. Willis, dean of textiles, Clemson College, S. C.

Methods of Opening and Blending

Mr. Corn opened the discussion by asking if any changes had been made in the methods of opening and blending by those present since 1932. All those answering replied in the negative. Mr. Corn then asked, "Do you prefer to feed your cotton to a line of hoppers, then to an opening lay-out; or do you prefer the reverse of this, then distributing this to the blending in each case?" R. L. Lindsay, of Saco-Lowell Shops, expressed the opinion that better results are secured—such as more even and cleaner laps—when the cleaning is done before blending. "We are still using the bale-breaker, vertical opener and pickers, but have no special system of blending," reported G. A. Frye, Florence Mill, Forest City, N. C. Mr. Lindsay stated that, "I think the tendency has been to increase the hoppers, which gives better cleaning, and then you in turn get better blending."

"Would you blend before or after cleaning?" asked the chairman. "I prefer to do the opening and cleaning away from the picker room, and then convey the cotton to the picker room where better blending can be accomplished," answered O. A. Sullivan, superintendent, Gaffney (S. C.) Mfg. Co. W. W. Cobb, of Cateechee, S. C., said, "We open our cotton and let it stand for a day and then blending, and in this way we are getting good results."

"The English manufacturers have no system of organization where double roving is used to make yarns under 40s," declared David Clark, of Charlotte, N. C. "Japan is quoted as being able to undersell our manufacturers because of cheap labor, which is absurd. But their ability to undersell us in foreign markets is due to the fact that they are able to accurately

J. O. CORN, superintendent, Pacific Mills, Columbia, S. C., veteran chairman of the Association's carding division . . . . . .

blend such short staples as 5/8-inch to 3/4-inch cotton, which is secured from America and India. They will use two American bales with eight bales of Indian cotton. Until we are able to find better methods of blending, we cannot expect to compete with the Japanese in the foreign markets. Of course their yarns will not compare with ours in strength."

W. E. Hammond, superintendent, Balfour (N. C.) Mills, reported that "in 1911 we tried to mix Indian cotton with American cotton, but it proved unsuccessful. We used 12½ per cent of Indian cotton and later 25 per cent, and in both cases the end breakage was so high we had to discard the idea."

Mr. Frye asked for a description of Mr. Sullivan's lay-out for blending after cleaning. Mr. Sullivan replied, "Use approximately five hoppers in the opening room where both cleaning and blending will be done. Then have a second set of hoppers in the picker room and clean between the first and second set of hoppers. In this case you blend before and after cleaning. Just by using the second set of hoppers you can greatly improve your blending. After this cotton is blended it is distributed to the line of machines."

"When the rayon plants are paying particular attention to the blending of wood pulp for the manufacture of rayon, I see no reason why we are neglecting this question," declared Mr. Hammond. "We all know how the character varies in our cotton, and too, how the percentage of short fibers runs in the cotton, therefore we should secure better answers to this problem."

Robert Huskey, overseer carding, Whitney (S. C.) Mfg. Co., next reported: "We are using five hoppers and mixing 36 bales at a time. We have to feed from each bale. Iwould like to have a second blending but am unable to do this after the cotton gets started."

"If you had 12 hoppers where would you use them?" the chairman next asked. "I would use all of them after the cleaning was completed," responded Mr. Lindsay.

Robert Huskey W. W. Cobb C. P. Hamrick

The chairman concluded this discussion by stating that, in his mind, "Mixing and blending are similar to long draft spinning. My experience with long draft forces me to say that a great deal of the success you get depends upon the good results you get before the product reaches the spinning. We should spend more time in studying the preparatory processes and master them as they have done in England."

Results with One-Process Picking

The chairman next asked, "What bad results have you experienced with one-process picking?" explaining ing that the inquiry was intended to reflect no criticism on the machine builders.

C. P. Hamrick of the Pacific Mills, Columbia, reported that, "our breaking strength fell four pounds after changing to one-process picking."

"We have two systems," reported O. A. Sullivan of Gaffney, "the breaker and finisher picker combination, and one-process pickers. The old type has two beaters and the one-process has three beaters. The laps that I feed to the cards from the one-process picker forces me to do more grinding on my cards."

Mr. Cobb of Cateechee said, "With our one-process picking, I think better results are being obtained, such as more even laps, high speeds and better cleaning. We made our unit from old machines." Mr. Gunter expressed the opinion that one-process pickers require more attention, that is, "you must observe more closely for thick and thin places. The air is another feature that requires observation."

"Will the variation in the height of the cotton in the hopper cause the lap to vary?" asked Mr. Hammond. "Yes," replied Mr. Gunter, "but we have a control in the hopper to take care of that variation."

"I have heard where some mills were getting a better breaking strength with one-process pickers, while others differ," said Mr. Corn. "However, I do not think it is the fault of the system if it fails to increase or decrease the strength."

"I saw a test at Fall River, Mass., where the laps were placed in a rack up by a window, and there you could observe and recognize the one-process laps because they had less thick and thin places," said David Clark.

Reverting to a statement by Mr. Sullivan, Mr. Corn asked, "Why is more grinding required by using one-process picker laps?" Mr. Godfrey, overseer of carding at Gaffney for Mr. Sullivan, replied that, "I think in one-process picking you get less blows per inch, and that in turn leaves more sand, etc., in the lap that will naturally cause more grinding." Mr. Sullivan explained that, "When we changed from the old system to the one-process we decreased our blows per inch from 42 to 37, and also decreased the lap roll speed."

"Personally," commented Mr. Corn, "I think the cotton is not as well opened because you have less beaters. If you had ten beaters before the change you should have ten now to get good results."

Mr. Bird of Hartwell, Ga., asked, "What causes thick places at the end of the lap?" Mr. Corn replied, "This is liable to happen on any machine. However, if you will notice when you stop your machine, your evener belt will shift its position, and when restarting after one or two minutes it takes some time for the belt to resume its proper position. You can remedy this by putting a brake on your clutch rod."

Smith Crow stated that at his mill—Drayton—they are considering changing to one-process picking, and "I would like to know about the results to expect since we are running 1 5/16-inch staple." D. H. Hill pointed out that this question of running long staple on one-process pickers was quite constructively discussed at the meeting of the Gaston County Division some time ago. (This was reported in the November issue of COTTON, page 34).

The chairman asked for figures as to the total blows per inch given the cotton. Mr. Hammond, the only one replying, stated that he gets a total of 89 blows per inch, on two beaters.

Further Experiences with Spraying Oil

The chairman next opened a discussion of spraying oil on the cotton in process. "I have been using oil for six years," replied Mr. Hammond, "and I know I have a cleaner room. I am using three-tenths of one per cent oil. Also, I am positive the oil remains on the cotton through the drawing, but cannot say whether it will remain on for the remaining processes." Mr. Huskey of Whitney said, "I have been running oil for eight years and do not get any better breaking strength. When I started to using oil I had to decrease the weight of my lap by half a pound." Mr. Burton declared that the health of the employees justifies the price paid for the oil. Mr. Sullivan of Gaffney said, "By oiling cotton I had to decrease the weight of the laps by two pounds."

"Can you find the oil on the product delivered from

any of the processes?" asked the chairman.

"I have observed skeins on the reel that were oiled and not oiled," reported R. K. Eaton, of Clemson College, "and those that were oiled gave every indication of having a better set twist than the non-oiled. Since there was no kinking in the skeins of oiled cotton there is every reason to believe that the oil remains on the cotton through the spinning." He suggested the possibility, therefore, of applying oil on the filling to prevent kinking.

"What limits the amount of oil you can apply?" asked Mr. Corn. Mr. Sullivan replied, "The performance of your card will limit the amount you can apply. That is, whether your percentage is so high that it will cause the card to choke up." Mr. Hammond added that, "If you use a high percentage of oil you can notice a difference in the card clothing. For instance, a two-hour run will ook like a four-hour run if too large an amount is used."

H. H. Willis H. H. Iler W. E. Hammond

"If your cards would not choke up, would you use more oil than you are using now?" the chairman next asked. Mr. Lindsay pointed out that this might gum up the grid bars; and Mr. Cobb of Cateechee added that too much oil might cause the fibers to crawl when drafting.

H. H. Willis, dean of textiles, Clemson College, next discussed the subject of oil spraying, saying, "From tests which I have conducted the indications are that from two-tenths to three-tenths of one per cent of oil is an advantage in that it keeps down considerable dust and fly on cards and subsequent processes. Some manufacturers apparently have had trouble with the cards loading up when they added a very high per cent of oil. In order to overcome this difficulty, one manufacturer is now developing the necessary equipment whereby any desired percentage of oil may be added to the cotton at the front of the card. This amount of oil is added at the point where the web is condensed to a sliver.

"Another advantage in this arrangement is that fugitive dyestuff may be added at this point by the use of oil or water. This should interest mills which are using different staples of cotton as well as left and right hand twist, in that by the addition of this fugitive dye the amount of supervision necessary to keep these different staples separate is reduced. Another advantage in this new equipment is that it is claimed that certain dyestuffs fast to light and washing can be added with this oil at the front of the card." Mr. Willis stated that definite announcement concerning this new process would probably be made within the next few months.

Chairman Corn pointed out that in the past, the problem has been "to add enough oil to get the cotton through the card successfully, and I predict that in the next few years we will be using anywhere from one to two per cent. Then, too, the oil may help to eliminate the breaking of fibers and their crawling."

"Is it better to grind your cards at a slow or a high speed?" Mr. Corn next asked.

Card Grinding Pointers

"I don't know which is better," replied Mr. Sullivan, "but we are using a high speed." Mr. Iler of Union Bleachery stated that, "I think it would be better to run the grinder faster and the doffer and cylinder slower; then you would get a smoother surface. I know this holds true when grinding rubber rolls in a finishing plant." Mr. Clark of Charlotte explained that there is now on the market a new camera for making magnified photographs of card clothing to see if the points are ground correctly. D. R. Dickson described a new needle point grinder now on the market for correct grinding, stating that one is in operation at the American Spinning Company plant. Mr. Hammond declared he prefers setting the grinder by sound rather than with a level.

Doffer Speeds

"Will it make any material difference if the speed of the doffer is decreased from 10 down to 4 r.p.m.?" asked Mr. Sullivan. Mr. Frye declared that he thinks it will produce better and smoother carding, while Mr. Hammond said he did not think it would be as clean. Mr. Sullivan said, "I feel it would be allowing the cotton to remain in the card too long, which would in turn give the cotton a great deal of rolling. However, I don't think a decrease in speed down to 6 r.p.m. would cause any trouble."

Methods of Determining Even Roving

"What methods are you using to determine the evenness of your roving, other than guess work?" the chairman next asked.

"We have a roving tester," reported W. H. Glenn, of Whitney, "but have not used it extensively. I find that you have to use practically three times the required weight on it to get a curve that will show any results. Provided the weights recommended are correct, about the only thing you can get from the use of the tester is that your twist is high."

"Is it possible to work by the results of this tester?" asked Mr. Corn. Mr. Glenn replied that, "you could go back and change your weight, speeds and drafts, or in other words, correct the weak places." His overseer of carding, Mr. Huskey, added, "We have received some good results from the tester, but the spinners claimed they could not run the roving."

"I firmly believe that we are in a period of scientific development," declared the chairman, in closing the discussion. "That is, in regard to roving testers and other phases of the industry. A good method of developing new and improved ideas is to enter into open discussions concerning your trials and results."

Textile Code Developments

DURING May there were several important developments under the operation of the textile codes. Of significant interest was the denial by the recovery administration of the petition from Chicopee Mfg. Corp., operating mills in Georgia and Massachusetts, for modification of the Cotton-Textile Code as to machine hour limitation.

Chicopee Petition Denied

As reported on page 64 of the May issue of COTTON, Johnson & Johnson, Chicopee's parent company, entered a plea to permit the operation of cotton-textile plants on four daily shifts of six hours each, with the agreement to pay the operatives as much for six hours work as had been paid for eight hours.

In denying the application on May 10, General Johnson acted on the recommendation of Assistant Administrator Robert W. Lea, who reported that, "if one concern were to adopt this proposed plan, many other concerns would be forced by various competitive reasons to follow suit and this would have an extremely adverse effect on the small enterprises in the industry, of which there are some 600 or more." It was further pointed out that the entire remainder of the industry was opposed to the proposal; this having been brought out in the public hearing on the petition in April, when George A. Sloan made his oft-repeated statement that the machine hour limitation was the keystone of the code, that to release the machine production limitation would result in chaos in the industry and in defeating the primary purpose of the recovery program in the textile industry.

Demand Goes Off

At this writing it appears that, due largely to the adverse factors and serious obstacles as mentioned on page 64 of May COTTON and in the addresses of George A. Sloan, T. M. Marchant and others reported in that issue, a falling off in demand for cotton textiles more than seasonal in extent had occurred. This decline in orders was attributed in May by the Cotton Textile Code Authority to the following adverse factors, among others:

1. Lack of buying confidence particularly in the heavy industries consuming cotton for industrial uses.
2. Labor difficulties in several important consumer industries with resultant suspension of operations.
3. The lack of a compensating tax on certain fibers that compete directly with cotton which is carrying a processing tax amounting to approximately $10,000,000 monthly.
4. Increasing encroachment upon domestic markets by imports from Japan and certain European countries, and
5. A tremendous decrease in cotton textile export business which the industry is making every effort to regain.

So many requests had been received early in May from the print cloth group and other branches of the industry for a temporary reduction in machine hours, that the Cotton Textile Code Authority canvassed all manufacturing establishments operating under the code to determine their attitude toward a general reduction in operations of 25 per cent throughout the industry for a period of 60 to 90 days. It was pointed out that decreased demand had appeared despite successful efforts in promoting National Cotton Week, for which the Institute spent four times as much money as in 1933 for national advertising and other general promotional activities.

General Curtailment Ordered

On May 22, General Johnson approved a recommendation of the Cotton Textile Code Authority for a temporary limitation of productive machinery in that industry to not more than 75 per cent of the maximum hours otherwise permitted under the code, with exceptions as noted below. This emergency requirement was confined to a period of 12 weeks beginning June 4th, except for the rayon weaving branch for which, owing to anticipated seasonal improvement in demand during the late summer, the limitation is for a shorter period than for cotton textiles and on a loom-hour basis. An 8-weeks curtailment is permitted for synthetic yarn staples and a 4-weeks period for synthetic yarn dress goods.

The curtailment, it was emphasized, "shall be made by reducing hours or days in each week and not by shutdowns of one or more weeks."

Many mills in the industry customarily shut down for several weeks during the less active summer season, and it is believed that the requirements of a uniform reduction in the maximum hours of operation by all mills will do much to prevent shut down and to preserve an equitable sharing of present inadequate business among the many mill communities North and South.

All single shift mills are excepted from the provisions of the order. For the most part, these are small plants. Certain groups in a relatively favorable statistical position, either because of demand from other industries or because of peak demand, at this season of the year, are also excepted. The following groups are thus exempted from curtailment:

1. Mills operating throughout the said 4-weeks periods a single shift of 40 hours or less per week;
2. Machinery actually engaged in filling such contracts for the U. S. government as were awarded against bids submitted prior to the date of the approval of the curtailment requirement; provided each manufacturer operating such machinery on government contracts so limit the operation of such similar active machinery not so engaged that the total actual operation of productive machinery shall not exceed the hours of operation respectively provided in these requirements;
3. Machinery in the industry engaged in the production of the following products: Tire yarns or fabrics for rubber tires; tobacco cloths; woven cotton blankets; upholstery and drapery fabrics; Jacquard woven bedspreads; merino -yarns; narrow fabrics made on multiple-shuttle or on fly-shuttle looms; paper dryer felt; and millinery foundation cloths.

As indicated above, recent statistical reports for the industry reflect slackening in demand in relation to production. In view of the seasonal dullness in cotton manufacturing, characteristic of the late spring and summer months, it was evident that if the situation were left to run its course the industry would again be faced with the demoralization usually attendant upon over-production to the detriment of mills, mill employees and the public. Unsold stocks of cotton goods at the end of April amounted to 330,000,000 yards, while weekly sales during April averaged about 80,000,000 yards per week. 26,450,000 spindles active at some time during April averaged 64 hours of operation per week and turned out an average of 130,000,000 yards per week, or 62½ per cent over current demand. Production equal to current demand would require operation of the active spindles not in excess of 40 hours per week.

General Strike Ordered and Called Off

A general strike of cotton-textile workers, which the United Textile Workers claimed would take 300,000 employees out of the mills, was called late in May by Thomas F. McMahon, president of U. T. W. It was to be in protest of the curtailment approved by NRA, as a demand for 40 hours pay for the 30-hour week. The strike was to be effective simultaneous with the curtailment on June 4th. At a conference between McMahon and advisors and General Johnson and George A. Sloan on Saturday, June 2nd, announcement was made that the strike was called off as a result of a compromise with the representatives of labor. The announcement stated that the curtailment order will remain in effect; one representative of employees will be named as labor advisor to the government members on the code authority and one to the labor advisory board. The membership of the cotton textile industrial relations board will be increased by one representative each of employers and employees. Certain investigations and reports by the NRA division of planning and research will be made.

Cotton Textile Code Authority Formally Approved by the NRA

In May the National Recovery Administration formally recognized and approved the membership of the Cotton Textile Industry Committee as the code authority for the cotton-textile industry. This recognition represented largely a formality, since the committee has been working effectively since the approval of the code which constituted it. Originally, the committee was designated by the Cotton Textile Institute and the National Association of Cotton Manufacturers and the American Cotton Manufacturers' Association. Subsequently, as other branches than strictly cotton manufacturing went under the code, other representatives were appointed to the committee by the National Rayon Weavers Association, the National Association of Finishers of Textile Fabrics, the Thread Institute and the Mercerizers Association of America. The complete membership of the Cotton Textile Industry Committee, as approved and recognized on May 9, is herewith presented as record:

George A. Sloan, Cotton-Textile Institute, Inc., New York; T. M. Marchant, Victor-Monaghan Co., Greenville, S. C.; Ernest N. Hood, Pequot Mills, Salem, Mass.; W. D. Anderson, Bibb Manufacturing Co., Macon, Ga.; Robert Amory, Nashua Manufacturing Co., Boston; Harry L. Bailey, Wellington Sears Co., New York; Bertram H. Borden, American Printing Co., New York; G. Edward Buxton, B. B. & R. Knight Corp., New York; Cason J. Callaway, Callaway Mills, LaGrange, Ga.; Charles A. Cannon, Cannon Mills, Kannapolis, N. C.; John B. Clark, Clark Thread Co., New York.

A. E. Colby, Pacific Mills, Boston; Donald Comer, Avondale Mills, Birmingham; Stuart W. Cramer, Cramerton Mills, Cramerton, N. C.; F. C. Dumaine, Amoskeag Manufacturing Co., Boston; B. B. Gossett, Chadwick-Hoskins Co., Charlotte, N. C.; R. E. Henry, Dunean Mills, Greenville, S. C.; Percival S. Howe, Jr., Amoskeag Manufacturing Co., New York; Henry G. F. Lauten, Prince Lauten Co., New York; Leonard S. Little, U. S. Finishing Co., Providence; J. Spencer Love, Burlington Mills, Burlington, N. C.; John W. Manley, Sayles Finishing Plants, New York.

G. H. Milliken, Deering Milliken & Co., New York; Frank I. Neild, Neild Manufacturing Corp., New Bedford; Charles Pinnell, Fred Butterfield Co., New York; Josef Pollack, Max Pollack & Co., New York; Albert L. Scott, National Association of Finishers of Textile Fabrics, New York; Seabury Stanton, Hathaway Manufacturing Co., New Bedford, Mass.; H. R. Stephenson, Southern Bleachery, Inc., Taylors, S. C.; Robert T. Stevens, J. P. Stevens & Co., New York; J. S. Verlenden, Standard Coosa Thatcher Co., Philadelphia; W. J. Vereen, Moultrie Cotton Mills, Moultrie, Ga.; Charles Walcott, New Market Mfg. Co., Boston; and Robert R. West, Riverside & Dan River Cotton Mills, Danville, Va.

National Cotton Week Provides Needed Trade and Consumer Stimulus

THE demands of NRA and other matters requiring intimate attention in no way lessened the interest or effectiveness of National Cotton Week this year, which was celebrated during the week of May 14-19. This annual event, conducted under the auspices of The Cotton-Textile Institute, marked the opening of the retail cotton season with over 30,000 retail stores actively participating and with community celebrations in many cities throughout the country during the week. The experience of the Institute's New Uses department, gained over the past several years, plus the cumulative interest in National Cotton Week by distributors, retailers and consumers, provided a constructive and profitable execution of the program.

It was estimated that more than a hundred million dollars worth of cotton merchandise were moved through retail outlets during the week. Department stores and specialty shops of many types—large and small—displayed and sold all forms of cotton materials.

"We are pleased with the magnificent recognition that retailers have given to National Cotton Week this year," said George A. Sloan, president of the Institute. "The amount of interest, enthusiasm and skill put into preparations for this observance goes beyond all our expectations. Important as National Cotton Week is this year, it is only the beginning of a cotton season which promises to set new records for sales of various classes of cotton merchandise. Among other developments, the new finishes have been most effective in extending the use and popularity of cotton for apparel purposes particularly."

S.T.A. Meeting, Myrtle Beach, June 29-30

Plans are rapidly forming for the annual convention of the Southern Textile Association at the Ocean Forest Hotel, Myrtle Beach, S. C., on Friday and Saturday, June 29 and 30. Hotel reservations should be made direct, according to Secretary Hill.

CURRENT TEXTILE TOPICS. . . .

Talk of the Month

AMID the persistent uncertainty through the spring of radical legislative talk and action in Washington, there was one note of encouragement for industry. Out of the bewilderment caused by threats of further restriction of hours, allowing labor to have an unprecedented part in the management of industry through place on the code committees, or other measures to keep up confusion, rather suddenly came an about-face which gave textile mill men a new lease of life on private initiative. A turn toward simplification of the NRA, but without any thought of its elimination, indicated that plans were shifting from emergency to permanent aspects; that officials were now resolving experiment into a practical program.

Resolving Experiment into a Practical Program

Widespread criticism of the NRA has been caused not by the demonstration of a complete weakness in the plan and the cotton industry would be the last to wish it dropped. The main complaint has been that it was tried too elaborately. Textile men were disturbed by proposals for enforced further shortening of hours when under the 40-hour schedule they had restored employment very close to the basis of 1927-1929; also by the fact that this would entail higher wages when in many instances they had already raised them above the base of that period. They allowed that labor might have its voice on such matters, but had no proper place on code committees dealing with purely management matters.

Without any further change, the mills were much involved in the spring months by the relation of controlled hours and wages to a downward movement of prices for goods. Under the NRA when costs except for raw material are not subject to reduction, a position of stability in markets is altogether essential. Yet weeks and months of stagnant turn-over in goods are bound to bring pressure on prices and in fact it was stated early in May that cotton cloths actually were selling below cost of production. At such an untimely moment, there was still agitation for shorter hours and further spread of work; a move for further experiment when business was in a cloud of obscurity from prevailing uncertainties.

Need for stability was one of the prime factors behind the overwhelming sentiment in the middle of May for a reduction of schedules by cotton mills over a period of twelve weeks. The spirit of cooperation with the NRA by the cotton industry shown for the second time within the first year under the code in a move to adjust production to demand, is a saving feature of the new era of control which is one thing warranting permanent establishment of the plan in its fundamental aspects. Buyers were reported holding off on essential commitments for goods purely for the purpose of affecting prices more bearishly. Repeated indications of a determination by the large industries which employ millions of workers to keep markets stable by controlled production would itself conduce to more even buying and distribution, to stability beyond the industries and thereby to the welfare of the whole country. That alone would justify the NRA.

Buyers are getting a good lesson from cotton manufacturers in the new economics, from the prompt action in forestalling burdensome and bearish accumulations of stocks. The move for curtailment on a concerted plan was not for relief from heavy supplies, as of yore. The mills ran through months on a high rate because of six weeks of heavy buying. They were operating on orders. Then unfilled orders began to run out and trading lagged because of outside conditions. Lag of the heavy industries, strikes and financial legislation all had their part in the strangling of activity in primary markets. Which all goes to show how industry must work persistently to promote a wise course of action at Washington. The economic future has become indissolubly linked with the political administration.

Among interesting suggestions regarding the new deal in industry is one that manufacturers may protect themselves by a renewed and far-reaching program of social or welfare work. The new leisure is a blessing to workers, if put to advantage. But if leisure time is allowed to become idle time, it will mean mischief as always. Textile manufacturers are said already to have found the reduced working time leading to unrest and to agitation along unionist lines. As has been pointed out previously, the current evolution is social-economic. The social aspect, it appears, is one for consideration in its hours of leisure as well as hours of work. Thus the cotton industry may find it necessary to evolve a new branch of social work for the best interests of mills and workers.

DURING the period of retard in goods trading, the New England cotton industry has had several things to occupy its attention, some of which are of great import to the mills at large. The adjustments between the Amoskeag Manufacturing Company of Manchester, N. H., and its workers, with the interruption of an unauthorized strike, have a bearing on the general labor situation. The case of the Hoosac Mills Corporation against the constitutionality of the processing tax naturally was a subject of vital interest to the whole cotton industry, especially as the levy on staple assumed a new seriousness when the mills ran low on orders. The tax has been a constant influence against production for stock because it entails extra financing, which augments the risk in making goods against prospective requirements instead of actual orders.

New England Mill Situation

MILL-PROVED

GOODYEAR TEXTILE BELTING "DELIVERS THE GOODS" AT LOWER COST

DEVELOPED BY PRACTICAL EXPERIENCE IN COTTON INDUSTRY

IT is easy to understand why Goodyear products for textile mill service last longer and cut costs.

Every inch of their construction embodies practical mill experience! They have been proved in actual mill operation!

Goodyear, itself a great user of cotton, knows by long experience the peculiar requirements of the industry—the fast, hard drives; the humid atmospheres; the necessity for uniform power to maintain even tensions on delicate threads.

With this intimate "inside" knowledge, Goodyear has naturally been able to build better designed equipment that serves you longer and more economically—

—exclusive Goodyear products like Goodyear Emerald Cord V-Belts, Goodyear COMPASS (Cord) Endless Belt, Goodyear THOR Belt, (Seamless) and Goodyear Air Hose for clean-up work.

SPECIFIED TO JOB BY GTM

Most important of all, these Goodyear products are individually specified to your particular operating conditions by the G. T. M.—Goodyear Technical Man. His wide experience in effecting mill economies is at your service; just write Goodyear, Akron, Ohio, or Los Angeles, California—or your nearest Goodyear Mechanical Rubber Goods Distributor.

Goodyear is represented in the South by authorized Goodyear Mechanical Rubber Goods Distributors, conveniently located with relation to your mills and able to supply promptly all Goodyear Mechanical Rubber Goods for the textile industry

THE GREATEST NAME IN RUBBER

NRA

GOODYEAR

TEXTILE BELTING

MADE BY THE MAKERS OF GOODYEAR TIRES

Sales lagged behind production for many weeks, following a business which gave the mills over four months of lively production. The consumption of cotton for the first quarter of the year in New England was estimated to have run nearly 43 per cent above that in 1933. The figures for April will show a continuation of heavy production, but slow buying after February put the turnover persistently below output, with the consequent need of retrenchment. From Fall River, the reports toward the middle of May were significant of an exceedingly dull market and quotations of prices were purely nominal with a suggestion of softening. The chief hope was in consumer buying of finished goods, with industrial and other buying held back till the general uncertainty hinging around Washington was dispelled.

From several angles, the situation at the Amoskeag plant was of high import to the cotton industry, if not to industry at large. The issue of arbitration through the Cotton Textile National Industrial Relations Board was tried and brought to a head in the agreement of management with the unions in the matter of adjustments between various classes of work that has been an important element of textile competition generally. Some of the workers, by their temporary refusal to accept the decision of the board, threatened to put in jeopardy the sound relationships of unions to the NRA. Repudiation of the sanctity of a contract also was involved, as well as the Amoskeag experiment with collective bargaining which was being watched by other mills.

Protests against the processing tax were frequent in the early stages of its operation, but it remained for the receivers of the Hoosac Mills Corporation to take direct action against it on constitutional grounds. The industry at large had accepted, unwillingly perhaps and also in belief that the measure was discriminatory or even unconstitutional, the condition and adapted itself thereto. It had not overlooked, however, the burden that was imposed, as witness one paragraph of the Cotton Textile Code authority in its list of factors that created more than seasonal falling-off in demand: "The lack of a compensating tax on certain fibers that compete directly with cotton which is carrying a processing tax amounting to approximately $10,000,000 monthly".

Massachusetts mills obtained a welcome relief from legislation which threatened to impose further financial burdens through a pick clock bill. At this writing, anyway, the proposal for a bill to enforce installation on looms of clocks to record the quantity of cloth turned out seemed dead for the present session. The manufacturers acknowledged that pick clocks are beneficial, but according to estimate it would cost the mills about $1,750,000 to install them and the burden would handicap operation when they are making efforts to emerge from a long spell of disastrous competition. Frank L. Carpenter, of the Cotton Manufacturers' Association of Fall River, stated that the clocks would make for greater efficiency but that while manufacturers are installing them as speedily as finances will allow, to establish any immediate date for complete equipment would be ruinous.

Clyde Mills of Westerly, R. I., were reported as the first cotton manufacturing plant to suffer withdrawal of the Blue Eagle. The mill makes cotton dress goods. The Greenville Finishing Co. had been fined for a violation of the rule affecting hours of operation, but the drastic action at the Clyde plant was for failure to pay the minimum wage over a long period. For restitution of the NRA emblem, it was stated, the company must pay up the deficiency in wages for the period of violation. The plant operates 70 narrow and 26 broad looms.

Among the personnel changes lately is the election of C. F. Broughton, many years treasurer of the Wamsutta Mills, New Bedford, as treasurer. He will retain the treasurership, but many of the duties will be filled by Otis M. Dunham, elected assistant treasurer. Mr. Broughton follows in an illustrious line of presidents, with Horatio Hathaway, Andrew G. Pierce, William W. Crapo, Oliver Prescott, William R. West and Joseph Grinnell. Grinnell was the father of cotton manufacturing in New Bedford. Another change is that John Sullivan has retired as agent of the Taber Mills, in the same city, after 26 years in the position. He has been active in the cotton industry for more than 65 years, having started at eight years of age. He retains connection with the Taber company, on the board of directors.

COMMENT ON THE COTTON MARKET

New Orleans, May 16, 1934.

AS THE present session of Congress draws to a close, to recess until next January, at least temporary relief from uncertainty is anticipated soon by business interests of the country. Much was accomplished by Congress in the past, but numerous other measures of importance are scheduled to be acted upon during the next few weeks. The Bankhead cotton crop control bill was made law. It is said that while it will limit tax free ginnings of next season to 10,000,000 bales, it will not control the size of the crop, which is true. Nevertheless, weather conditions in the cotton region will, to a large extent, govern the size of the growing crop, as will perhaps, the doings of insects, especially the boll weevil, and there is no telling at this time what the future has in store in this respect.

There was some disappointment in the final "make-up" of the Bankhead bill, and the proposals to regulate the stock and commodity exchanges of the nation, deprived the markets of needed support, except that wheat advanced as result of the drouth in the grain regions of the West. Until of late there was disappointment also as to proposed silver legislation, but late developments are more favorable, report having it that a tentative agreement was reached, virtually assuring silver legislation, probably before Congress adjourns, which, it is believed, would be constructive. However, as is usual at this time of the year, a seasonal reaction is looked for in general business. The New York cotton goods market is reported quiet, and there is talk of the probability of extensive curtailment by domestic cotton textile mills, beginning, perhaps, in June. This would be quite a contrast with the large domestic consumption of raw cotton last summer.

World's Consumption of Cotton

The New York Cotton Exchange Service estimated the world's consumption of lint cotton, as follows:

Bales—	This season	Last season
World's consumption of American in March	1,177,000	1,201,000
For eight months, August through March	9,354,000	9,288,000
Of all kinds during March	2,201,000	2,114,000
For eight months, August through March	17,013,000	16,112,000

UNIFORM QUALITY COTS ASSURE UNIFORM QUALITY YARN!

WITH Armstrong's Seamless Cork Cots you get maximum uniformity in roll coverings. Each cork cot is exactly like every other cork cot—because the ingredients are always the same . . . and they are uniformly fabricated. Armstrong's Cork Cots are not subject to the variations in quality that are bound to occur in unfabricated products of nature.

It is significant that many mills making sale yarn and tire fabric yarn—mills that demand the utmost uniformity—use Armstrong's Seamless Cork Cots. In addition to getting uniform yarn, mills that are "on cork" save 50% to 75% on roll covering costs.

Uniformity of product and economy of operation—two good reasons for equipping your spinning and card rooms with cork rolls.

Write today for full information. Armstrong Cork & Insulation Co., Textile Division, 923 Arch Street, Lancaster, Penna.

Armstrong's Seamless Cork Cots

FOR SPINNING AND CARD ROOM ROLLS

Considering the claim that foreign mills are consuming more of foreign growth at the expense of American, which is true, American, nevertheless, so far is holding its own pretty well since the total for the first two-thirds of the season is slightly larger than for corresponding period last season, but a less favorable showing for American is looked for during the summer.

The Apparent Supply of Cotton in the United States April 1st

The Bureau of Agricultural Economics recently reported that the apparent supply of cotton on April 1st was 11,200,000 bales versus 12,800,000 on same date last year, and 13,000,000 on corresponding date in 1932.

CENSUS REPORT FOR APRIL

United States—Bales—	This season	Last season
Consumption of lint cotton in Cotton Growing States, April	406,678	388,895
In New England States, April	90,937	68,335
In all other States, April	15,088	13,129
In United States, April	512,703	470,359
Consumption of lint cotton in COTTON GROWING STATES, 9 months	3,551,759	3,522,822
In New England States, 9 months	776,058	582,098
In all other States, 9 months	130,190	114,012
In United States, 9 months	4,458,007	4,218,932
Mill stocks, April 30th	1,584,746	1,371,218
Stocks in public storage and warehouses, April 30th	7,101,941	8,151,913
Stocks in mills, public storage and warehouses, April 30th	8,686,687	9,523,131
Stocks in mills, public storage and warehouses, March 31st	9,502,587	10,244,317
Active spindles during April	26,450,750	23,421,680
Active spindles during March	26,503,876	23,448,134

BRITISH BOARD OF TRADE REPORT FOR APRIL

Year—	1934	1933	1932
Exports of yarn, pounds	11,000,000	9,000,000	14,000,000
Exports of cloth, yards	154,000,000	171,000,000	199,000,000

As yet no encouragement is derived from British trade returns, and while there is some comfort in knowing that domestic consumption held up well thus far, the talk of probable extensive mill curtailment, expected to start next month, is not cheering.

The latest of private estimates as to this year's acreage range from 27,500,000 to 30,320,000 acres. Last year's harvested area was estimated by the government last December at 30,144,000 acres.

According to the New York Cotton Exchange Service, sales of fertilizer tags, in nine principal cotton states, during April, was for 669,000 tons versus 949,000 tons in April last year, and for five months, December through April, 2,615,000 tons, against 2,078,000 for corresponding time last season. Although the total for five months is much larger than last year, returns for April were smaller than generally expected.

TOTAL AVERAGE RAINFALL IN TEXAS, IN INCHES

Year—	1934	1933	1932	1931	Normal
In April	3.19	1.40	2.50	2.36	3.16
November 1 to April 30	15.11	11.65	18.01	15.28	13.36

Recently College Station, Texas, reported boll weevil emergence prior to May 1st was 4.84 per cent, or 1.7 per cent above normal, and of late there have been reports of the pest making its appearance in parts of Oklahoma, Tennessee, Louisiana and Alabama. As result of the recent rains inland, weevil reports are likely to increase, especially if June should prove to be a wet month.

Progress of the Growing Crop

Summary of Washington's review for week ended May 15th . . . "Temperatures averaged near normal in the eastern and in the western portions of the cotton belt, and decidedly above normal in central areas. Rainfall was light to moderate rather generally over the belt. These conditions made another favorable week for the cotton crop, with the showers the latter part in the Carolinas and locally in southeast Georgia being especially helpful. Rapid progress was reported from Texas, with chopping advancing to the northern sections of the State. In Oklahoma, seeding is normally along, and it made rapid progress in Arkansas, where stands and conditions are very good. In Tennessee, Mississippi and Louisiana, progress of cotton was mostly good, while in central and southern Georgia stands show improvement. Rain at the close of the week, while mostly light, was beneficial in the Carolinas and southern Virginia, but more is needed in this area, where much less than half of the normal rainfall has been received since the first of the month."

WHAT THE SOUTHERN MILLS ARE DOING

WALTON Cotton Mill Co., Monroe, Ga., has about completed a cloth storage building, two stories, 80x90 feet. Arthur K. Adams Co., of Atlanta, are the contractors; Warfield and Keeble, of Nashville, Tenn., are the architects.

Cotton Mill Products Co., Mobile, Ala., are installing one-process picking in an addition, 30x80 feet, built for the purpose.

An additional Sanforizing machine has been installed at the Pepperell Mfg. Co. plant at Lindale, Ga.

Alamance Novelty Mills, Inc., Burlington, N. C., have been granted a charter to engage in textile manufacturing. The authorized capital is $250,000. The incorporators are W. S. Coulter, L. C. Allen and Eva B. Clapp, of Burlington.

Another Sanforizing machine has been installed at the Highland Park Mfg. Co., Charlotte, N. C.

Erwin Cotton Mills Co. will replace 43,000 spindles with new Saco-Lowell long draft spinning at their plant at Cooleemee, N. C. New drawing frames will replace existing equipment. A great deal of the mill equipment is being electrified.

Proximity Mfg. Co., Greensboro, N. C., are making a complete installation of Abbott circulating spindle cone winders at their Proximity Mill, to replace older equipment.

Hudson Cotton Mill, Hudson, N. C., is replacing 24 spinning frames with modern equipment; carding machinery will be replaced later.

The plant of the Gaston Mfg. Co., Cherryville, N. C., which has been taken over by John A. Baugh, Jr., and O. G. Morehead, who were formerly executives at the Loray plant of Manville-Jenckes Corp., Gastonia, will be operated as the Gaston Process & Manufacturing Co. The plant is a yarn mill with 12,000 spindles.

Lexington Silk Mills, Lexington, N. C., are installing 72 new automatic silk looms, replacing older equipment.

A new office building is being erected at the Pee Dee Manufacturing Co., Rockingham, N. C. Price-Smith Co. has the contract.

The lighting systems of Mill No. 1 and Mill No. 2 of Springs Cotton Mills, Fort Mill, S. C., are being modernized by the F-B Electric Co. The company is installing 150 additional looms with individual motor drive.

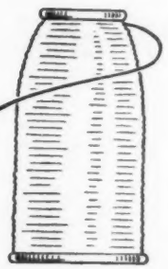
Greensboro Full-Fashioned Hosiery Mills, Greensboro, N. C., have been making improvements, including the installation of humidifying and air conditioning equipment in the plant.

Shafer Hosiery Mill, Mount Airy, N. C., is now in operation manufacturing men's hosiery; the product is finished at the Renfro Hosiery Mill.

Ragan Knitting Co., Thomasville, N. C., will build a 26x76 foot addition, which will be two stories; the annex will be used for packing and storage purposes.

It is reported that Charles H. Bacon Co., Loudon, Tenn., is planning to install additional full-fashioned machinery.

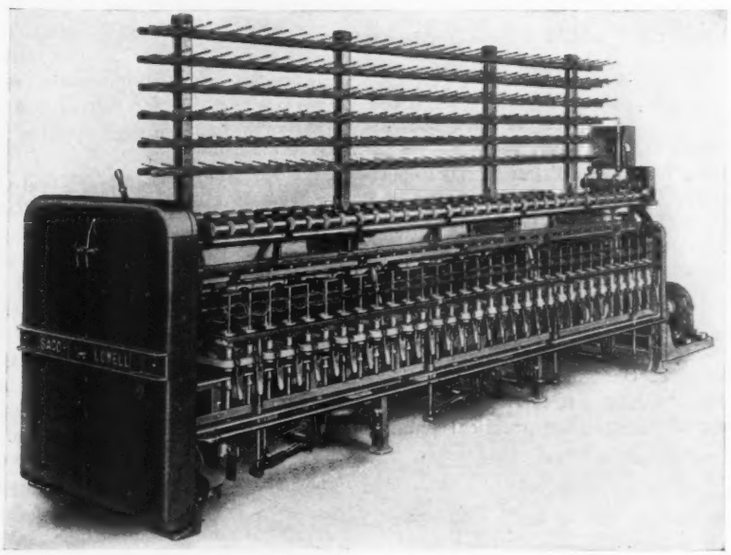
Roberts Hosiery Mills, Radford, Va., have been incorporated with an authorized capital of $25,000. H. T. Roberts is president; G. M. Roberts vice-president; and William Ingles secretary.



Presenting

a new line of Saco-Lowell

SERIES 4 HIGH SPEED TWISTERS



● ADVANCEMENTS IN THE ART OF TWISTING have made possible higher spindle speeds, larger packages, and greater uniformity of twist.

● AS PIONEERS IN THE DEVELOPMENT of High Speed Twisting equipment and in the application of modern steel construction to textile machinery (which construction provides for many mechanical and operating advantages), we offer in the Saco-Lowell Series 4 a line of twisters which meets every requirement of today's exacting standards. Write for new catalog describing this modern twisting equipment.

SACO-LOWELL SHOPS

147 MILK ST., BOSTON, MASS.

CHARLOTTE, N. C. ATLANTA, GA.
GREENVILLE, S. C.

NEW TEXTILE EQUIPMENT AND PUBLICATIONS . . .

New Atwood Catalog

Atwood Machine Company, Stonington, Conn., have issued a new catalog of their winders, twisters, re-draws and other machines, for rayon and silk yarns. It is pointed out that now all Atwood machines are oil-less.

A new re-draw is described, along with the other Atwood equipment. In this new machine, it is pointed out, the bobbin stops automatically when the thread breaks or when the bobbin is full. The regular type of take-up, or the drum type similar to that used on twisters, is available. A new tension device acts directly on the thread. The machine has closed end stands, and new chain drives, with milled traverse cams optional. The name of this new machine is the "Victor" re-draw.

* * *

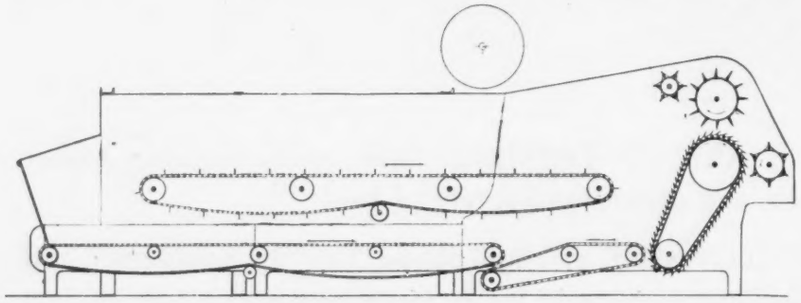
New Bale-Mixer

Lummus Cotton Gin Company, Columbus, Ga., is manufacturing a new and interesting development for better mixing and blending cotton, which is being marketed by A. P. Aldrich, Jr., Box 186, Laconia, N. H., and Box 750, Atlanta, Ga.

This new development, as is seen from the accompanying cross-sectional view, is applied in the hopper of the bale breaker and over the feeding apron, so that it occupies no floor space. The extension apron of the bale breaker, instead of being driven intermittently to fill the bale breaker hopper, is operated at the same speed as the bottom feed apron in the bale breaker. This will naturally feed cotton to the bale breaker four or five times as fast as this machine requires. The surplus cotton over and above what passes the stripping roll of the bale breaker and is fed out of the machine, falls back on the upper apron of the bale-mixer which travels toward the back of the machine and carries the surplus cotton away from the spiked apron as fast as the stripping roll throws it back. This cotton upon reaching the back of the machine is dropped upon the lower apron to be returned to the spiked apron again.

It can be seen that lumpy or poorly opened masses of cotton will be instantly thrown back by the stripping roll and must repeatedly pass through the machine until all lumps and masses have been thoroughly opened, it is explained.

Fresh cotton from the bales is fed into the intake hopper at the back of the machine, where it is carried along with the rest of the stock to the spiked apron.



Section view of new Bale-Mixer

* * *

Drake Reports

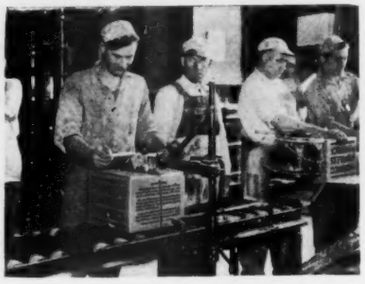
American Leather Belting Association, 41 Park Row, New York City, has published and will soon issue a second edition of "50 Reports on the Mechanical Transmission of Power from Motor Drive to Industry", by Robert Drake. The book represents three years' work on the part of the author, financed by 35 manufacturers of leather belting and mechanical power transmission equipment. It contains 224 pages with complete table of contents and index. It is free from propaganda and covers the practical plant application, operation and maintenance of all kinds of motor drives—including multiple v-belts, belting, chains and gears.

It provides a needed source of complete information on the subject of mechanical power transmission. It covers the entire subject of individual motor drives and modern group drives, showing that some combination of both systems are needed in most plants.

Copies of the book are available from the association officers at a nominal price.

New Packaging Equipment

Acme Steel Company, 2840 Archer Avenue, Chicago, Ill., have developed a new packaging equipment which involves the use of Acme steel strap. This new equipment, which consists of a tool mount package guide and package stop, is said to assist greatly in speeding up the strapping operation.



New way of packing

The accompanying illustration shows the equipment in use on the packaging production line for Plibrico. The tool mount holds the Acme strapping always in position, and is adjustable to packages of various heights. The new equipment is readily installed in existing conveyor systems or can be furnished attached to a roller conveyor.

* * *

Stainless Steel Chains

Diamond Chain and Manufacturing Co., Indianapolis, Ind., who have been making their roller chains of stainless steel on special order for several years has gone into production on the most commonly used sizes and these chains will be stocked for immediate shipment. The chains are made entirely of 18-inch stainless steel throughout, not coated or plated. The company recommends them for use wherever corrosion is a problem either from the standpoint of service life, sanitation or appearance.

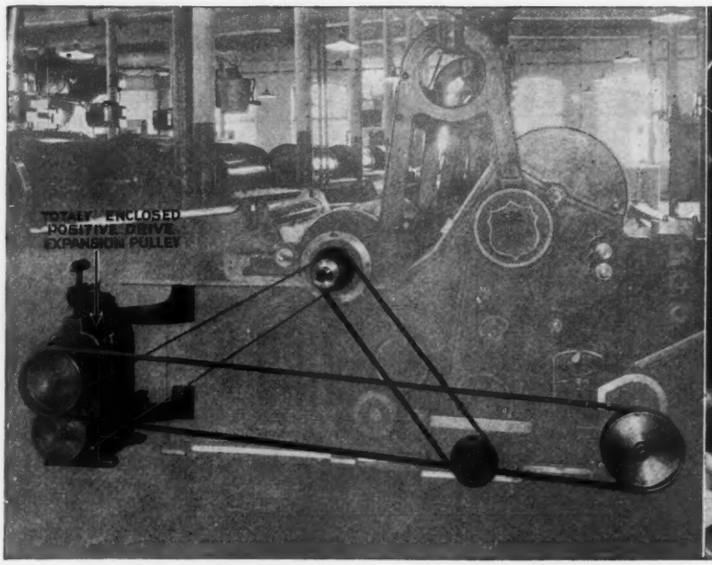
* * *

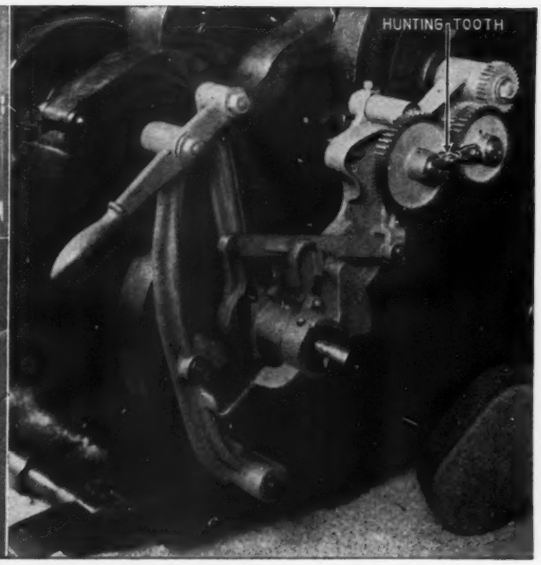
New Rayon Sizer Construction

Charles B. Johnson, Paterson, N. J., has announced improvements in the company's new silk and cotton system sizers. One new feature is the elimination of cone pulleys and slip belts. A new compensating drive which regulates the speed of the quetsch to conform to that of the drying cylinders, provides positive predetermination and control of stretch. A quick change gear box is provided to regulate the tension for any desired percentage of stretch.

A friction disc drive is used to replace slip belts; this is similar to the usual cotton slasher drive, except that all parts revolve in ball bearings.

Another new development is a new main drive which includes in one unit a motor, variable speed transmission and slow speed and reversing motion.





YOU TOO SHOULD HAVE THESE IMPROVEMENTS IN ONE PROCESS PICKING

BECAUSE of a patented system of evening, laps made by H & B One Process Picking vary less than 3/8 to 3/4 of an ounce from yard to yard, resulting in an average productive efficiency of about 99 percent by actual manufacturing experience. NOW our latest installations (one of which is illustrated) include additional improvements which make the total efficiency of the system still nearer 100 percent.

POSITIVE DRIVE ON DELIVERY EVENER

This improvement, which is totally enclosed (therefore the inner mechanism not being visible in the illustration) has been effected by the substitution of expansion pulleys in place of the regular type cones. This device provides a powerful, positive drive that is absolutely free from belt slippage or breakage. The expansion pulleys used are a compact unit of the Reeves variable speed mechanism.

AUTOMATIC KNOCK-OFF AND MEASURING DEVICE . . .

This device operates on the hunting tooth principle, but measures more accurately than similar mechanisms now on the market. The leverage of the knock-off handle is such that almost no effort is required to start up the machine. All wearing seats and teeth are hardened to withstand long usage. Changes for any desired yardage are quickly made.

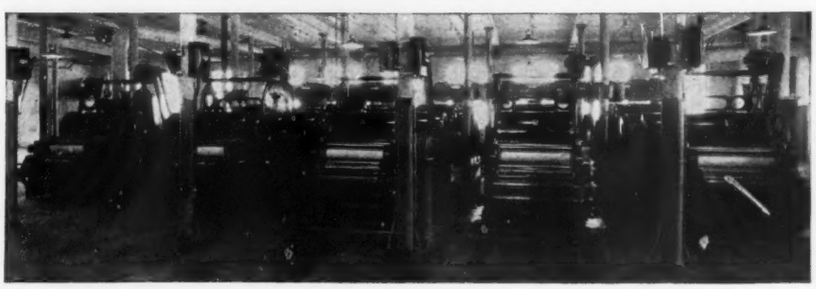
Naturally you want the usual savings in power and labor and the usual increase in production that go with any type of one process picking. Why not specify H & B and get these extra advantages at the same time? Further information on request.

H&B

H & B AMERICAN MACHINE CO.
Cotton Preparatory and Spinning Machinery
PAWTUCKET, R. I.
BOSTON OFFICE: 161 Devonshire Street
ATLANTA OFFICE: 815 The Citizens and Southern National Bank Bldg.

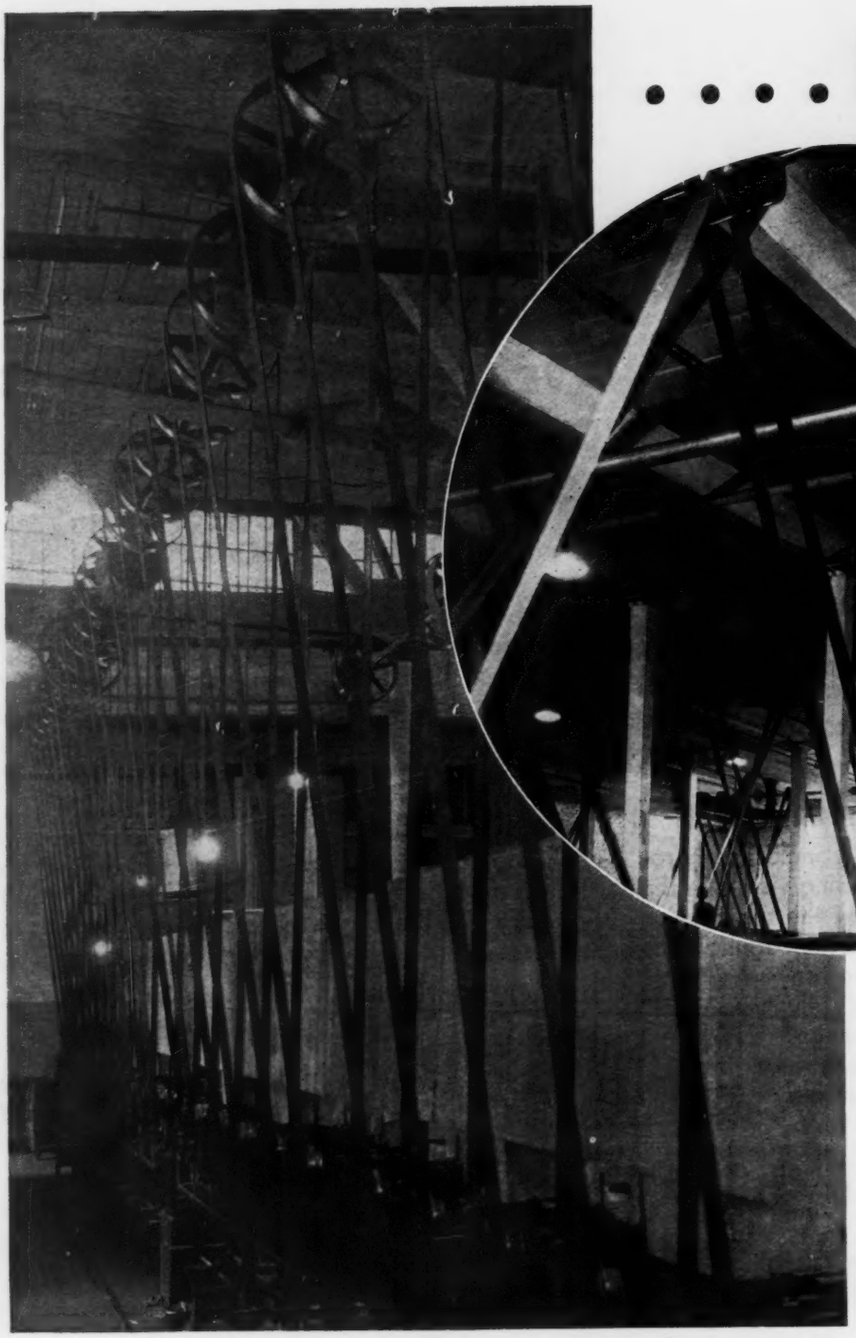
ONE PROCESS PICKER

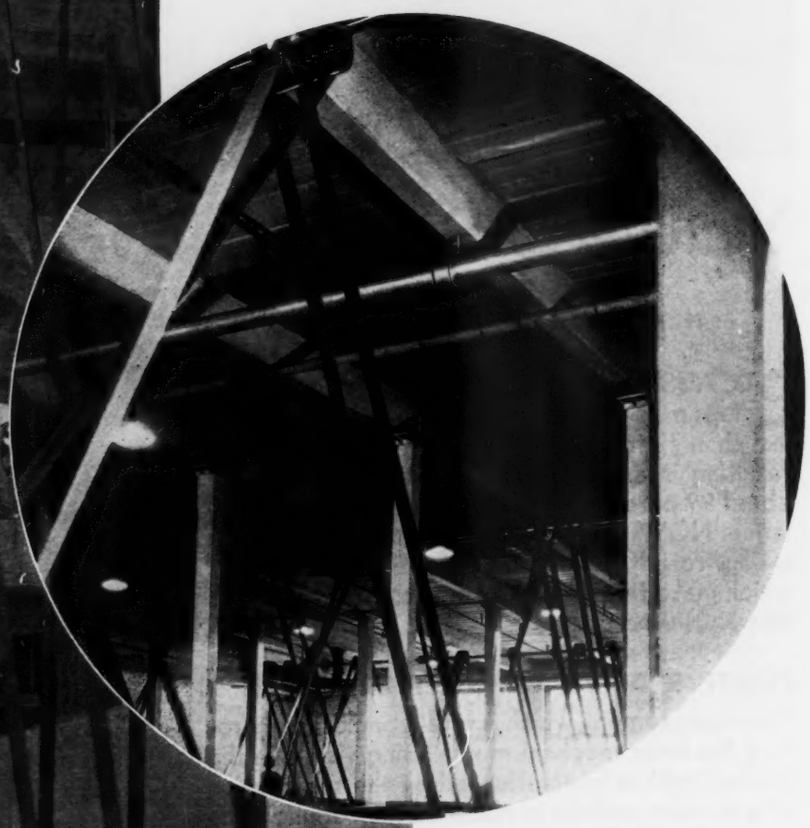
Battery of H & B One Process Pickers Recently Installed in a Well Known New England Mill and similar to hundreds of others we have made.



BELTS THAT TAKE

. . . . and are





Saco-Pettee Card Drive—Another machine where Highflex Jr. assures better and longer service, due to the Goodrich formula of belt application.

Universal Winder Drive—equipped with 1½ inch, 4 ply Highflex Jr. Belting. Distance between shaft centers, 12 feet.

Goodrich

TURKISH BATHS

none the worse for wear

HAVE you ever seen a rubber and fabric belt that could withstand the "turkish-bath" atmosphere of a spinning room or weave shed?

For years we watched other rubber and fabric belts being torn apart by excessive tension due to moisture absorption. The rubber seemed to be all right but you couldn't expect the cotton fabric to do anything but shrink.

Then Goodrich made a discovery. And the result was Highflex Jr.—the first special cotton mill belt. Into the belts themselves, but more particularly into their application, goes the experience of Goodrich belting specialists who have found out what keeps rubber and fabric belts from shrinking.

Highflex Jr. is demonstrating its superiority in every single mill where it is being used. Cotton mill men are finding out that:

1—Highflex Jr. maintains higher, more uniform speeds.

2—Highflex Jr. requires less attention, little or no taking-up.

3—Highflex Jr. operates more smoothly, with less vibration.

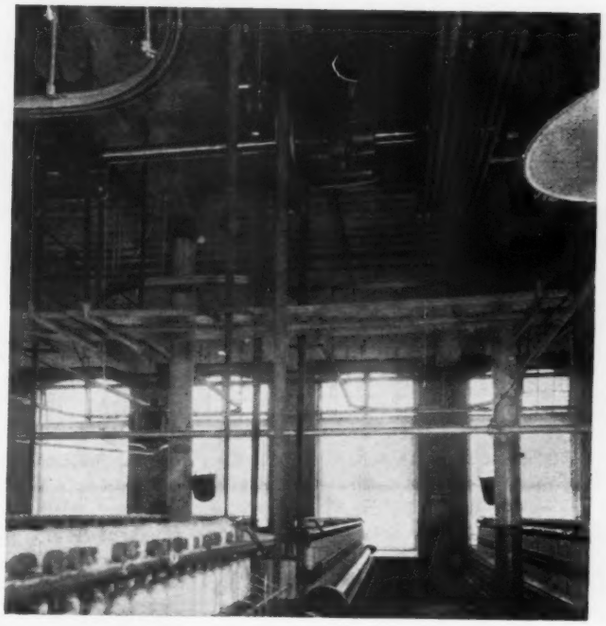
4—Highflex Jr. costs less—⅓ to ½ the price of ordinary belting. And it saves even more by increasing production.

If you have not already investigated Highflex Jr.—the ideal belt for cotton mill service—call in the Goodrich distributor or write direct for further information. The B. F. Goodrich Rubber Company, Mechanical Rubber Goods Division, Akron, Ohio.

GOODRICH MECHANICAL RUBBER GOODS FOR THE TEXTILE INDUSTRY INCLUDE:

- *Transmission Belting*
- *Multiple-V Belts*
- *Conveyor Belting*
- *Air, Water, Suction, Steam and Fire Hose*
- *Roll Coverings*
- *Packing . . . and*
- *A Complete Line of Miscellaneous Rubber Items*

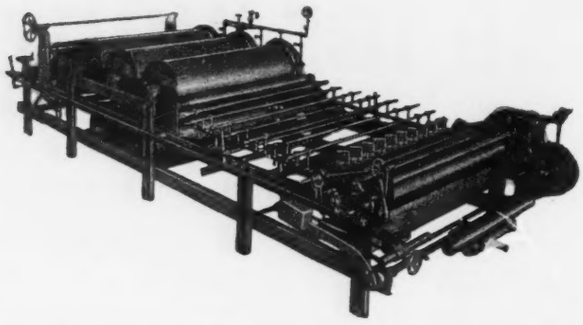
ALL *products problems* **IN RUBBER**



Saco-Pettee Spinning Frame—3" gauge; a two frame line-shaft bicycle drive. Despite the severity of this service these belts have been in continuous service for 3½ years.

Highflex Jr. Belting

This drive, for which patent has been applied, is controlled from every important operating point of the machine. The slow speed motion enables the operator to remove ringers or to make other repairs without bringing the machine to a full stop, and imparts just enough "creep" to the warp to prevent size marks in the warp, back lash, and stickiness in weaving caused by a complete stop, it is pointed out. The reverse motion permits running the warp back through the machine when desired.



The Johnson sizer for synthetic yarns . . . .

Both the cotton and silk system sizers are equipped with adjustable solution pans. The pan may be dropped to the cleaning position, and restored, with one movement of a lever. The cut marker is quickly adjustable to mark the edge of any width goods and for any length. An electric predetermined counter, which is standard equipment on the cotton system sizer only, can be set to suit various lengths of goods required. This may be hooked up with a single light or a bell, or if preferred, with a stop motion that will halt the machine when the desired yardage has been reached.

The immersion roll used in the cotton system sizer exclusively may be quickly raised or lowered, it is pointed out. The leak proof steam glands, syphon drainage system, and the 3-roll ball bearing quetsch and other features of the Johnson sizers have been retained in the new model. Chain gears have eliminated the necessity of building up and tearing down draw rolls in the cotton system sizers. The machine is constructed on a unique principle which permits the incorporation of improved features in older machines by users.

* * *

Catalog on Launder-Ometer

Atlas Electric Devices Company, 361 West Superior Street, Chicago, Ill., have issued a bulletin on their new machine, "The Launder-Ometer", an electrically operated laboratory washing machine of 20 specimen capacity for making reproducible tests of textiles, soaps, detergents and other materials and chemicals requiring mechanical action with controlled agitation. This machine was described on page 74 of the April issue of COTTON.

* * *

Dust-Hazard Prevention Data

A series of monthly folders dealing with "dust-hazards" and their prevention in various industries is being issued by The Northern Blower Company, West 65th St. and Barberton Avenue, Cleveland, Ohio. The subject is dealt with in an unbiased manner, the data used will whenever possible consist of Government reports, reprints of authoritative articles from leading trade papers; tests and information from the company's own records; and similar reliable sources. It is planned to make the complete series a valuable record to assist executives in eliminating occupational sickness among employees; also fire and explosion risks, etc.

* * *

Multi-Color Bobbins

The Clover Leaf Manufacturing Co., Honesdale, Pa., is marketing the Clover Leaf multi-color bobbins, the primary purpose of which is to give the throwster a simple, safe and sure method of designating the various lots of silk being thrown, eliminating the necessity of checking the silk. Using three simple colors—red, black and white—the new bobbin system has built a series of more than 200 distinct color combinations. It is explained that with the proper use of these new bobbins, the throwster may have more than 200 different lots going through the mill at one time, with each lot distinctly identified at every point in the process, and with a multi-color tag in the throwster's office identifying each lot.

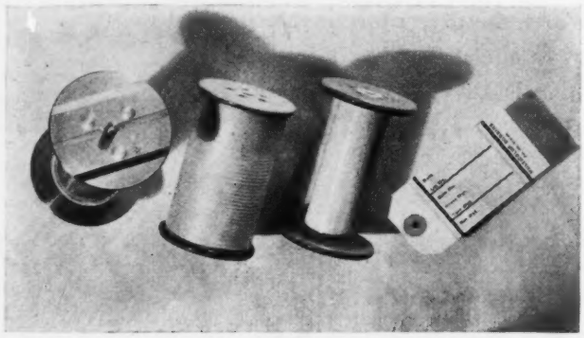
It was explained following the Knitting Arts Exhibition in Philadelphia, where the bobbin was exhibited for the first time, that many throwsters saw in the new system a particular and immediate application in helping them to keep track of the many "special lots" which are constantly going through the mill; others, operating hosiery plants at several points, saw the possibilities of segregating the production of each plant by giving to each plant its own distinctive bobbins; while others commented on the possibilities of a particular multi-color bobbin to be reserved for their exclusive use, in making a simple and practical method of keeping track of shipping bobbins.

The colors and combinations of colors as used in these bobbins are registered (Patent No. 310365). The illustration shows some of the variations in color on the vulcanized fiber in Bakelite bobbin heads and on the metal heads. It also shows a sample of the record card which identifies each lot in the throwster's office.

* * *

New 1024-Page Catalog Issued by Link-Belt

A new general catalog of 1024 pages, with list prices effective April 1st, has recently been completed and distributed by Link-Belt Company, Chicago, Philadelphia, San Francisco. In the foreword, the book is referred to as a Handbook of Practical Information on Link-Belt Cost-Reducing Machinery—for the mechanical conveying and preparation of materials, and the transmission of power. It shows such of the company's products as can be purchased on a list and discount basis, gives engineering and dimensional data, and should prove useful to the designing engineer and buyer alike. Among the equipment covered are elevating and conveying chains, elevator buckets, sprocket wheels, chain drives, power transmission machinery, positive variable speed transmission units, standardized bucket elevators, apron conveyors, screw conveyors, belt conveyors, etc.



Some Multi-Color bobbins and sample of the record card . .

THE ENZYMATIC *All-purpose* DE-SIZING AGENT!

RAPIDASE

Print cloths de-sized with RAPIDASE are soft and absorbent.

Starch and dextrine print pastes are easily removed from printed fabrics and back grays

PRINT CLOTH
PRINTED FABRICS
BACK GRAYS

WALLERSTEIN CO.

INCORPORATED

171 MADISON AVENUE NEW YORK CITY

TIMELY NEWS ITEMS WITH A TEXTILE SLANT . . . .

Easley and Brooks Represent Belger

The Belger Company, 36 Pleasant St., Watertown, Mass., have announced the appointment of Curran S. Easley, Box 755, Greenville, S. C., as their selling agent for North and South Carolina. Fred P. Brooks, Box 941, Atlanta, Ga., is the company's representative in Georgia, Alabama and Southern Tennessee. The company markets the sliver tester, roll spacing determinator, automatic roving tester, "Martin" cones for roving frames, etc.

* * *

H. & D. Transfer Van Wagner

In order to strengthen its representation in the Southeastern territory, The Hinde & Dauch Paper Company, Sandusky, Ohio, has transferred W. B. Van Wagner, formerly of the Hinde & Dauch Louisville office, to Winston-Salem, N. C., with offices in the Reynolds Building.

* * *

Stephens-Adamson Reopen Offices

Stephens-Adamson Mfg. Co., conveyor manufacturers of Aurora, Ill., have reopened sales-engineering offices at Pittsburgh, Pa., at 1206 Gulf Building, and at Huntington, West Va. The Pittsburgh office is in charge of Harry W. Banbury, and D. W. Allen is in charge of the Huntington Division.

* * *

Changes in C. I. T.

Important changes in the executive personnel of the Commercial Investment Trust Corporation factoring division have been announced. Francis T. Lyons, who has been president of Commercial Factors Corporation, was elected vice-president of Commercial Investment Trust Corporation in charge of all factoring activities. Johnfritz Achelis was elected president of Commercial Factors Corporation succeeding Mr. Lyons who will continue his connection with that corporation as chairman of the executive committee.

The C. I. T. factoring units comprise Commercial Factors Corporation, William Iselin & Co., Inc., and Meinhard, Greeff & Co., Inc.; the combined volume of business last year exceeded $218,000,000 and they are factoring for more than 600 mills and manufacturers.

Mr. Lyons has been associated with the factoring industry since 1903, when he entered the credit department of Wm. Iselin & Co. Mr. Achelis represents the third generation of his family to serve in the business founded by Fred'k Vietor & Achelis in 1842.

* * *

Clemson Seniors Visit

The seniors at the Clemson textile chemistry and dyeing department at Clemson College, S. C., recently visited the Pacific Mills, Lyman, S. C., and the Southern Worsted Company at Greenville, S. C. At the Pacific Mills attention was centered on the study of hydrogen peroxide bleaching, printing, continuous vat dyeing, and calender finishing of cotton piece-goods. The Southern Worsted Company furnished an example of the manufacture and processing of worsted piece-goods. Interest at this plant was centered on the dyeing of slubbing in the form of tops by means of the Franklin Process pressure dyeing machine, the mixing and blending by means of gill boxes, twisting by cap spinning, weaving, and washing and fulling.

* * *

New Selling Policy of Atlanta Brush Co.

The Atlanta Brush Company, Atlanta, Georgia, through their president, T. C. Perkins, have announced a new selling policy on brushes for textile mills and other users of industrial brushes. They have instituted a direct sales policy, which they advise, will enable them to furnish their customers with fresh, new and clean brushes and assure more personal attention and quicker service. Mr. Perkins states this new policy enables them to make lower prices on their brushes to the textile mills and to give discounts for quantity orders. The Atlanta Brush Company manufactures a wide variety of all types of brushes and has for years specialized on brushes for the textile mills, which are among their largest customers.

* * *

Improved Mill White Paint

U. S. Gutta Percha Paint Company, Providence, R. I., manufacturers of "Barreled Sunlight" mill white paint, have announced improvements in this industrial paint which, it is pointed out, result from thirty years of highly specialized experience in the manufacture of white paint. These improvements cover five essential points, it is explained; the new product "has been made whiter; more lastingly white with greater resistance to 'yellowing'; spreading power and hiding power have been further increased resulting in reduction of amount of paint necessary; and still greater ease of flow provides speedier, more economical application".

* * *

Grease Gun Patent

According to Paul B. Eaton, Patent Attorney, Charlotte, N. C., a patent has been granted to W. Y. Brown of Charlotte, N. C., on a grease gun which comprises a portable framework having the grease gun mounted thereon driven by an electric motor and a storage battery mounted on the frame work for driving the motor and the grease gun. The operator on the end of the hose delivering the lubricant under pressure to the bearings has control of starting and stopping the motor by a button on the end of the hose. This invention, it is pointed out, permits the use of a grease gun without the use of a long drop cord; the apparatus can be rolled from place to place and is self-contained.

* * *

James W. Cox, Jr., Now with Iselin-Jefferson Company

James W. Cox, Jr., until recently president of the Sibley Manufacturing Co. and the Enterprise Manufacturing Co., Augusta, Ga., has become associated with the Iselin-Jefferson Co., 328 Broadway, New York City, in an executive capacity. Floyd W. Jefferson, in making the announcement, stated that the addition of Mr. Cox to the Iselin-Jefferson organization "made it possible for the agency to offer to their mills an unusual service of broader scope. Mr. Cox will be available to study the machinery and equipment of individual mills in relation to their adaptability to specific types of cloths. This should lead to a closer understanding between mill and selling house, resulting in the production of fabrics more profitable to the mill."

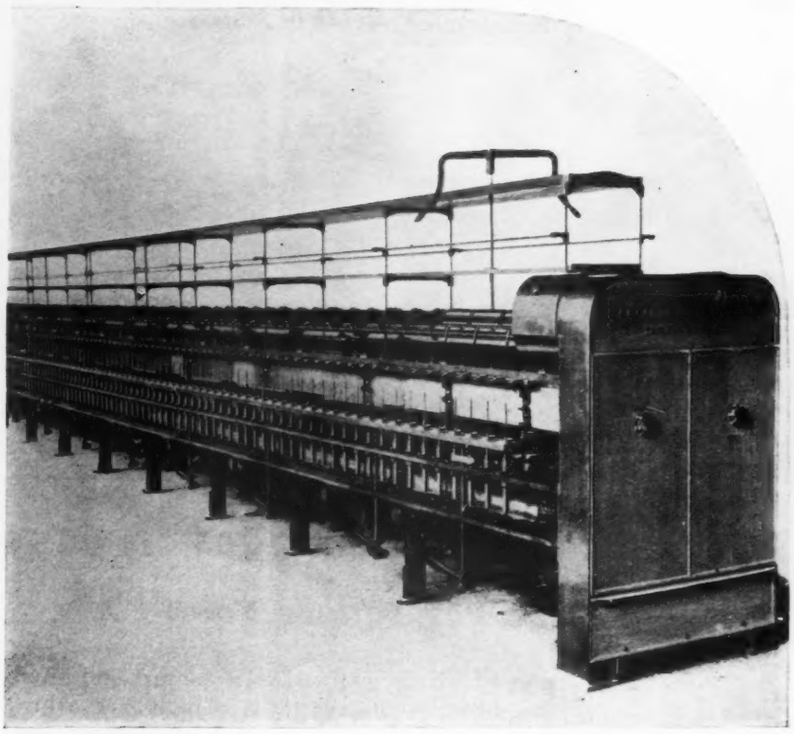
For 11 years previous to his connection as head of the Sibley and Enterprise mills, Mr. Cox had headquarters in New York City as head of a firm specializing in the development and merchandising of fabrics of all kinds as well as in general mill management and reorganization work.

* * *

SKF in New Headquarters

SKF Industries, Inc., have announced, in connection with the removal of their executive offices to Philadelphia, as reported in February COTTON, that "the consolidation of the executive, engineering, research and production departments into one unified organization can only mean better progressive service and engineering advice to industry. The SKF Industries Inc., is peculiarly fitted to render scientific studies and to advise in antifriction problems and design, inasmuch as it is a part of a world-wide organ-

SKF EQUIPPED
BUILT BY
H. & B.
AMERICAN MACHINE
COMPANY



SPEEDY SKF PERFORMANCE ALWAYS SMOOTH

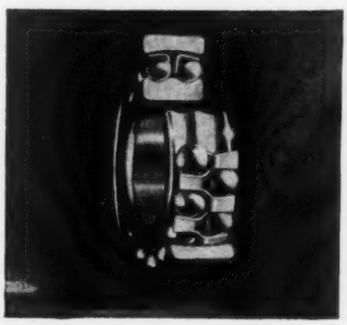
▼ ▼ ▼ AND STEADY

SPINNING FRAMES that maintain a high production average are *invariably* SKF-equipped. That's because SKF dependability is insurance against lost time due to bearing breakdowns . . . because SKF Bearings, as the ones on the cylinder shaft of this H. & B. Model "B", give constant smooth operation without vibration.

Original settings are maintained indefinitely for SKF's show no wear . . . *need no adjustments.* The machine remains remarkably clean, because the sealed housings prevent leakage of lubricant and exclude dust and moisture from the bearing. The mark SKF on a textile bearing not only means that it represents the highest bearing quality attainable . . . it means the *right* bearing in the *right* place . . . always!

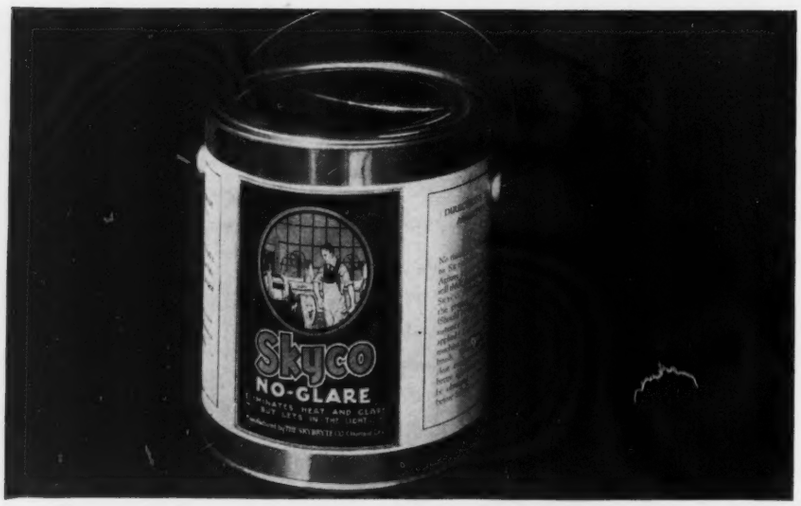
3217

● *You may buy a bearing as a bargain but try and get a bargain out of using it, for nothing is apt to cost so much as a bearing that cost so little*



SKF INDUSTRIES, INC., FRONT ST. and ERIE AVE., PHILADELPHIA, PA.

SKF
Ball and Roller Bearings



Buy Your Window Shades in Cans

at 1-2c Per Square Foot!

SOLVE the expensive problem of eliminating glare and heat from factory windows and skylights thru the use of SKYCO NO-GLARE, the sky-blue liquid which when painted over glass filters the fierce rays of the sun—shutting out *all* of the glare and a *lot* of the heat, yet it admits 94% of the light. The cost is only about ½c per square foot of glass covered.

For ten years No-Glare has served many of our largest industries, saving them hundreds of thousands of dollars in expensive window shades. No-Glare has never been successfully imitated. If you have tried substitutes and been disappointed — try the *genuine*. If it does not live up to our claims you may return it at our expense.

The action of No-Glare is simple. It filters out the infra-red sun rays—that part of sunlight which produces heat but not light —and allows 94% of the natural light to flow through with restful diffusion.

Like an Umbrella Over Your Plant

No-Glare is easy to apply either to the inside or outside of the glass and will stay on until removed with brush and warm water. Let this economical and effective product solve *your* problem. Use the coupon or write for a 1-gallon trial can on a money-back basis.

Try NO-GLARE at our Risk

Write or Use Coupon

The SKYBRYTE Co.,
1929 E. 19th St., Cleveland, Ohio.

Gentlemen:

Enclosed find trial order of 1-gallon of SKYCO NO-GLARE at $3.50. It is understood that if we are not satisfied we can ship it back collect and our money will be refunded.

Name of Company.....

Address .....

ization maintaining six research laboratories, 15 plants and 250 factory branch offices throughout the world. The special ore it requires comes from its own mines, and special steel from its own mills. The charcoal it uses in processing its special steels comes from its own forests. In the belief that a precision product requires every modern facility, the company has not only scientifically grouped its departments, but has made vast expenditures for latest scientific and mechanical devices."

* * *

New Stoker Book

Link-Belt Company has just published an interesting book, "Firing Method Modernized for Profit," giving a comparison of hand firing and controlled automatic underfeed firing of boilers from 10 to 250 b.h.p. This book illustrates in graphic and pictorial form such features as smoke elimination, uniform temperatures and pressures, coal savings, firing efficiency, etc., etc.

* * *

Scientific Survey of Textile Sizing

An automatic recording viscometer is a vital need of that large part of the textile industry that uses starch pastes in the sizing of its warps or finished goods. This was one of the findings of the conference on the sizing of cotton and rayon warps held on May 11 at the Hotel Commodore by the United States Institute for Textile Research. The effectiveness of starch pastes used in sizing depends largely upon the maintenance of a desired viscosity, but starch pastes are notoriously unstable in viscosity; therefore, the need of an effective instrument to record the change in viscosity. Even more important is the need of some salt or other chemical that will increase the stability of starch pastes; this buffering agent must be relatively cheap, since the sizing process, though necessary, is one of extremely low cost per pound of yarn or fabric.

This conference was designed by U. S. Institute for Textile Research for a scientific check-up of existing trade practice in sizing methods and materials; it being recognized that the technique of sizing is the result of empirical development, rather than of scientific research. The existing technique is similar to that in certain other equally old industries where the "how" of processing is well standardized, but with little scientific knowledge of "why" certain methods and materials are used. U. S. Institute proposes to organize a research program, based upon the findings of this conference, the results of which it is hoped will show whether or not sizing methods are scientifically correct, and whether

or not they may be improved and cheapened along scientifically correct lines.

An attendance of more than 75 manufacturers and members of allied trades most of whom took part in the open discussion at morning and afternoon sessions, reflected keen interest in the subject. Dr. H. DeWitt Smith, vice-chairman of U. S. Institute's research committee, was chairman of the conference.

* * *

Reception to Abbott

On Saturday evening, April 21, the employees of the Hillsborough Mills, Abbott Machine Co., and Abbott Worsted Mills, Wilton, N. H., attended a reception to E. J. Abbott and other members of the Abbott family on the anniversary of Mr. Abbott's connection with the business for 25 years. The reception was in the form of a surprise party to Mr. Abbott, and after the presentation of a silver tray to Mr. Abbott, refreshments were served followed by dancing. About 350 people, all employees of the three different mill organizations, were present and signed their names in a book which was presented to Mr. Abbott as a souvenir.

* * *

Woven N R A Emblem

The faculty of the Bradford-Durfee Textile School at Fall River, Mass., has distributed a limited number of a very attractive NRA emblem, designed and woven by Manuel Franco, a night student at the school. The emblem reproduces the familiar Blue Eagle and slogan of the NRA, and is attractively designed and excellently woven.

* * *

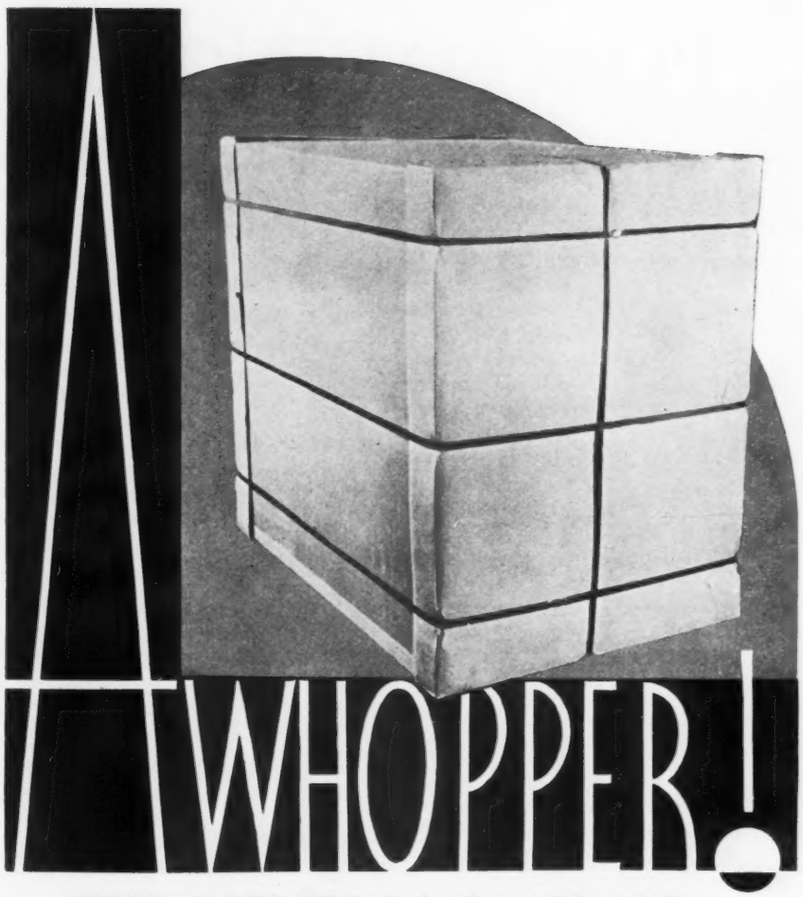
Cotton Course at Clemson

A cotton grading course will be given at the Textile School at Clemson Agricultural College, Clemson College, S. C., beginning June 11 and to continue for four weeks. H. C. Robertson, Cotton Specialist of the U. S. Department of Agriculture, will be in charge. Students will have the opportunity of inspecting and grading some 3,000 to 5,000 samples of cotton. Government standards, both for grade and staple, will be demonstrated, and there will be special lectures on cotton spinning and testing.

* * *

K. A. Durham Joins Textile Banking Co.

Kenneth A. Durham, formerly with Richmond Hosiery Mills, Rossville, Ga., in charge of credits, has joined the executive forces of Textile Banking Co., 55 Madison Ave., New York City. His headquarters are at Charlotte, N. C., and he will serve as southern representative, contacting all types of textile manufacturing in the southern states.



HEAVY TEXTILE PACKAGES ARE SAFELY PACKED IN H & D BOXES!

Hundreds of Textile Manufacturers are shipping their products more economically and just as safely in corrugated fibre shipping boxes, a large share of which are made by Hinde and Dauch. « « « «

H & D corrugated fibre textile boxes are substantially constructed of the strongest, toughest fibre board made. Their light weight reduces freight costs to a new low and their tough, corrugated walls afford ample protection to all types of products. « «

Our free book "Corrugated Boxes and How to Use Them" gives valuable shipping information as it pertains to corrugated fibre boxes. We'll gladly mail you a copy. Address — THE HINDE & DAUCH PAPER CO., 454 Decatur Street, Sandusky, Ohio.

HINDE & DAUCH *Engineered* TEXTILE BOXES

LIGHT WEIGHT » DURABLE » DUST-PROOF

H & D FACTORIES ARE AT YOUR SERVICE IN
BOSTON, RICHMOND, BALTIMORE, PHILADELPHIA, NEW YORK, BUFFALO, CLEVELAND, SANDUSKY, SAINT LOUIS & KANSAS CITY. IN CANADA, TORONTO & MONTREAL

PERSONAL NOTES
about Men You Know

PERRIN N. COLLIER, who has been manager of the Valway Rug Mills, LaGrange, Ga., and Truline, Inc., Roanoke, Ala., for the Callaway Mills, is now assistant to FULLER E. CALLAWAY, treasurer of Callaway Mills, on manufacturing at all of the other Callaway plants in LaGrange, as well as those named. These include the Hillside, Calumet LaGrange, Elm City, Unity Spinning, Unity Cotton, and Oakleaf plants. Announcement of other changes in the Callaway executive organization was made on this page in the April issue.

Mr. Collier

H. F. SHUFORD, superintendent of the Elm City plant of Callaway Mills, LaGrange, Ga., has been made general master mechanic for all of the company's LaGrange mills. (See description of new manufacturing policy on page 39 of this issue.) B. W. ROBINSON, formerly superintendent of the Calumet LaGrange plant, has been transferred to Elm City succeeding Mr Shuford. H. T. DAUGHDRILL succeeds Mr. Robinson at Calumet.

D. L. WALL has resigned as superintendent of the Bemis Bro. Bag Company cotton mill at Bemiston, near Talladega, Ala. Mr. Wall has been associated with the company for 29 years, during the last 10 of which he has been superintendent.

JOHN A. BAUGH, JR., and O. G. MOREHEAD, agent and general superintendent respectively of the Loray plant of Manville-Jenckes Corp., Gastonia, N. C., have resigned to become president and vice-president and general superintendent respectively of the Gaston Process & Mfg. Co., Cherryville, N. C., which will operate the spinning plant of the Gaston Mfg. Co., recently acquired by Mr. Baugh and Mr. Morehead and associates.

L. S. LIGON, Greenville, S. C., has been appointed southern representative of the Abbott Machine Co., of Wilton, N. H., manufacturers of the Abbott circulating spindle cone winder. Mr. Ligon, who succeeds A. S. THOMAS in this position, was formerly connected with the Barber-Colman Company and recently has been representing the Hygrolit Company.

A. D. AMMONS, who for a number of years has been assistant overseer of spinning at Manville-Jenckes Corp., Gastonia, N. C., has been promoted to general overseer of spinning. GEORGE O. MINTZ, who has been assistant overseer of spooling and warping, has been promoted to general overseer of this department. HUGH WRIGHT has been promoted to assistant overseer of spooling and warping at this plant.

SETH NEWSOM, who took special textile work at Clemson textile school in 1928 and 1929, has recently been promoted to assistant superintendent of two of the Callaway plants at LaGrange, Ga.

AUSTIN H. CARR, president and treasurer of the Durham Hosiery Mills, Durham, N. C., was elected a vice-president of the National Association of Hosiery Manufacturers at their annual meeting. Mr. Carr is also a director of the Association and a member of the Hosiery Code Authority.

Mr. Carr

R. M. Ross has been transferred from overseer of carding on the second shift at the Hickory Spinning Co., Hickory, N. C., to general overseer of carding at the Highland Cordage Co., Hickory, N. C.

W. L. PHILLIPS has become associated with the Riverside Mills, Augusta, Ga., as superintendent. He recently has been superintendent of the Mary Delia Mfg. Co., Thomson, Ga.

J. H. HADDOCK has been made superintendent of the Waxahachie Cotton Mills, Waxahachie, Texas. Several years ago Mr. Haddock was connected with the Erwin Cotton Mills Co., at Durham, N. C.

W. V. BYERS, who has been superintendent of the Erwin Cotton Mills Co. Mill No. 2 at Erwin, N. C., has been promoted to assistant manager of the company's plants at Durham, N. C., where P. B. PARKS is manager. W. H. MILEY, JR., has been transferred from Mill No. 5 at Erwin to succeed Mr. Byers at Mill No. 2. P. B. PARKS, JR., has been transferred from Mill No. 6 in Durham to become superintendent of Mill No. 5 at Erwin, and A. R. MARLEY, formerly at the company's plant at Cooleemee, has become superintendent of Mill No. 6 succeeding Mr. Parks, Jr.

JOHN W. LONG has resigned as superintendent of the Hampton Spinning Mills, Clover, S. C., to become superintendent of the Goldberg Mills, Gaston County. He will reside in Gastonia.

J. L. BARNWELL has succeeded M. W. MAYES as superintendent of the Tifton (Ga.) Cotton Mills.

HOMER L. PRUITT has become overseer of weaving at Mills No. 1, No. 2 and No. 3, Pelzer Mfg. Co., Pelzer, S. C. Mr. Pruitt was overseer of weaving at Lanett, Ala., for the West Point Mfg. Co., and more recently superintendent of the Adams-Swirles Cotton Mills, Macon, Ga.

FRED L. SMYRE, treasurer, A. M. Smyre Mfg. Co., Gastonia, N. C., has been elected to the planning committee of the Southern Combed Yarn Spinners Association to fill the vacancy caused by the resignation of R. GRADY RANKIN, who resigned to assume duties with the Duke Power Co. The committee is now composed of A. K. WINGET, of Albemarle, N. C., chairman; ARTHUR M. DIXON, and FRED L. SMYRE.

A. K. WINGET was made president of the Southern Combed Yarn Spinners Association succeeding Mr. Rankin, and W. H. SUTTENFIELD, of Statesville, N. C., was made first vice-president. Mr. Suttenfield is chairman of the executive committee of the association, the other members being S. P. STOWE of Belmont, N. C., and KAY DIXON, of Gastonia, N. C.

B. G. WOODHAM has resigned his position with the Precision Gear and Machine Co., Charlotte, N. C., to become assistant superintendent at the Sanford (N. C.) Cotton Mills. Mr. Woodham was graduated in textiles at Clemson College in 1921.

Obituary

HARRY B. LORD, treasurer of Joseph Sykes Bros. (American) Inc., passed away at his home in Saco, Maine, on May 3rd, following a heart attack and a short illness. For many years, prior to joining the Sykes organization, Mr. Lord was selling agent for the Saco-Lowell Shops in New England. He was one of the best known men in the textile machinery industry. He is survived by Mrs. Lord and one daughter.

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TO LOWER COSTS

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BARBER-COLMAN AUTOMATIC SPOOLERS AND SUPER-SPEED WARPERS

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and the New Portable

MODEL "LS"

WARP TYING MACHINE

FOR SILK AND RAYON

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BARBER-COLMAN COMPANY

FRAMINGHAM, MASS. ROCKFORD, ILL. GREENVILLE, S. C.

Once again— Riegel reports:

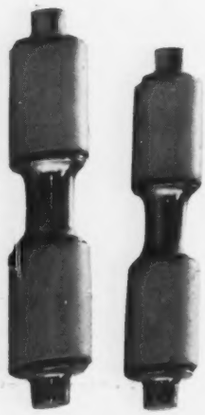
"We use SPINNA CALF 100% at Ware Shoals!"

12,000,000 pairs of work gloves a year is typical of Riegel output — tremendous quantity, constant sales.

So states the Superintendent of Riegel's great 75,000-spindle mill at Ware Shoals.

This added to the previous statement of Riegel's Superintendent at their 110,000-spindle Trion Mill—"We use SPINNA CALF exclusively on our long draft spinning rolls"—is certainly convincing evidence.

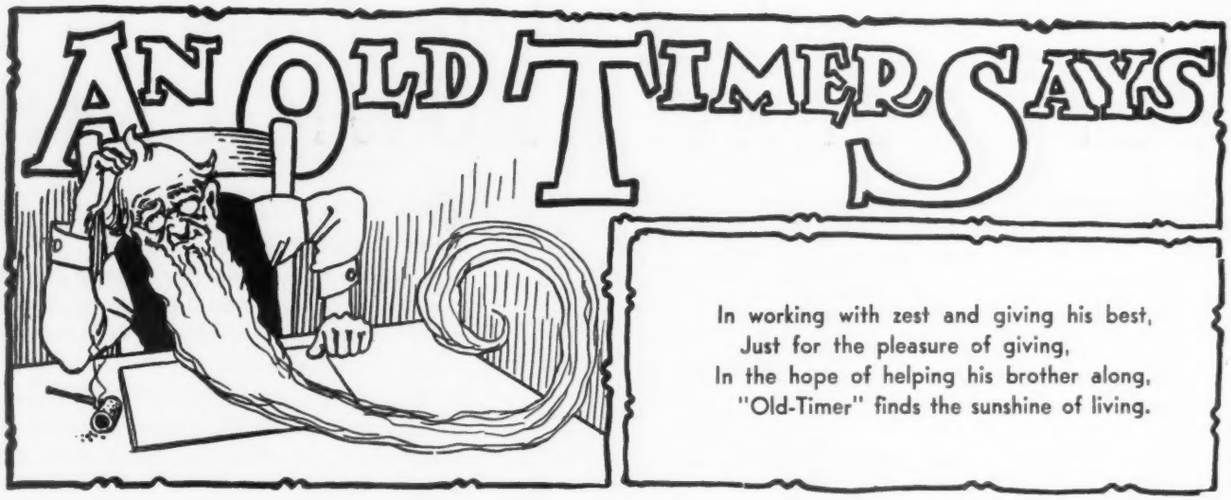
Such double-barrelled testimony from the fourth largest cotton operation in America speaks for itself—and SPINNA CALF—eloquently!



A. C. LAWRENCE LEATHER CO.

Specialists in Textile Leather

BOSTON, MASS. PEABODY, MASS. GREENVILLE, S. C.


AN OLD TIMER SAYS
In working with zest and giving his best,
Just for the pleasure of giving,
In the hope of helping his brother along,
"Old-Timer" finds the sunshine of living.

The Story of Old Timer's Methods of Working and Management

Part Twenty—Continued from April Issue

(Note: Since this series is written in conversational style it should be borne in mind that those paragraphs in regular type represent OLD-TIMER'S part of the conversation, and those in *italics* are JIM'S part.)

To get back now to the inspectors: If you will have a book containing the name of each inspector, or the number of her machine, and then have the overseer or some other responsible person to inspect a sufficient number of cuts of cloth each day, getting around each week to where one or two cuts from each inspector's record has been examined, and if you will make a record in your book of the findings in those cuts of cloth, you will have something you can take up with your inspectors when it becomes necessary. No inspector will know when you are going to look at a cut of her cloth; therefore, she cannot prepare for you. You should at intervals call an inspector to the desk and tell her what you have found. Tell her that she is doing a good job of inspecting her cloth, if she is; that she is washing out the oily spots nicely, making a neat job of the scratch-ups, or, just the reverse, if she is doing bad work. The good part of the system, as previously explained, is, that she does not know when you saw her cloth or when you will see it again, but she realizes that *you know* how she is doing her work.

For inexpensive oil removers, here is a very good formula:

One ounce of chipped or pulverized castile soap.
Two ounces of ammonia.
½-ounce of ether.
½-ounce of alcohol (wood or grain).
Five gallons of gasoline.

Dissolve the soap in warm water and add the other ingredients slowly.

This preparation can best be used in spring bottom oil cans with the stem cut off to enlarge the hole and made smooth to use the stem as a scrubber instead of using a paddle. It will not only take the oil out, but will dry very quickly and leave no stain on the cloth.

Then here's another good formula:

Twenty gallons of boiling hot water,
Six pounds of chipped or pulverized castile soap,
Two quarts of silicate of soda (stir until well dissolved) and one quart of carbon tetra-chloride (pour in very slowly while stirring). Then add 10 gallons of cold water and you have 30 gallons of oil remover that will certainly do the work.

I prefer the first formula because it dries so quickly.

With both preparations you will need a board about 10 inches by 12 inches, covered with several thicknesses of cloth, to place under the cloth containing the oil spot, while applying the preparation and for a foundation to scrub on.

Look at those graders, JIM.

Yeah, that one on the end is a pretty good looker, isn't she?

You old fool! I mean look at what they are doing. Don't you see they are cutting the cloth at least four inches on each side of the bad places, just wasting that much cloth? Have them cut the cloth right at the edge of the bad place.

And watch that folder man lay the cloth on the folder table. Don't you see he is placing the end of the cloth several inches beyond the middle of the folder table? In other words, each inside end of the folded cloth is longer than ½-yard. You are also losing cloth on those old folders which have tables that are

*An unusual red sulphur brown**

SULFOGENE BROWN CL4R

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SULFOGENE Brown CL4R is a red shade of sulphur brown.

Is particularly useful for dyeing cotton yarns and piece goods, holding its shade quite well on after-treatment with copper, chrome and acetic acid.

*Properly oxidized SULFOGENE Brown CL4R does not give the shade variations on ageing that are characteristic of most red sulphur browns.

By combining this du Pont Dyestuff with SULFOGENE Brown RBNCF and SULFOGENE Tan 2RCF you may obtain a wide range of desirable brown shades. Why not send for sample of SULFOGENE Brown CL4R? It may be just the dyestuff that will fit in with some of your current jobs.

DU PONT DYESTUFFS
REG. U.S. PAT. OFF.

E. I. DU PONT DE NEMOURS & CO., INC.,
Organic Chemicals Dept., Dyestuffs Division
WILMINGTON, DELAWARE

in two pieces. (New folders have the tables made in one piece). The two-piece table allows the cloth to make such an arc after about 80 yards are folded that the outside folds are longer than the inside folds. Suppose you take several large cuts, (cuts 200 yards if you fold that large) stretch it out on floor and measure with a 50- or 100-foot steel tape. Maybe you will be surprised.

And Jim,—wake up, I am almost through—are you putting up as large a bale as your press will take or as large as your customers will take? There is a possibility that you can save some labor, ties, buckles, etc., if you will look into that. Also notice the cutting of your burlap. The men will usually cut it too long if you don't have some system about it—maybe you have got a system—well, go and see if it is working.

(Jim is now sleeping soundly, so I will slip off to bed and leave him. See you later fellows.)

Conclusion

If you have been reading these articles since the first one appeared in COTTON I suggest that you try to go back over them in your mind and you will realize that in describing each and every system throughout every department of the mill they all have one main object, namely, to minimize the human element.

Surround your work with a simple system which will insure you of getting your orders carried out, a system which will enable you to accomplish in 30 minutes what it would take you hours to do ordinarily. For example, I can go into the card room and by looking at the overseer's record see when he looked at his drawing stop motions; I can look over a few frames in five minutes and see that he did what his record says he did. Otherwise, it would take me some time to look at every stop motion on all the drawing.

I wonder how many superintendents who read these articles have looked at the drawing stop motions in their mill in a year. Still, you realize it is a good thing for you to know that they have had the overseer's attention, don't you? The reason you have not personally looked at them is that you just don't have time. But if you had a system that would only require five minutes of your time once a month, yes, even once in three months, you could do it, couldn't you? Matters not how large your mill is.

That one illustration certainly will, or should, show you that these simple systems we have been trying to explain will make you a better overseer or superintendent than you could possibly be without any system of machinery inspection at all. Of course we have not intended that you should adopt these systems literally. We have only made an attempt to give you an idea; then if you will put your own ideas with it you certainly should have a better idea or system than these we have explained.

Let it be distinctly understood, however, that the systems we have shown you have actually been used by me for more than 24 years. As explained in the first article, the system was first used in an effort to learn how to fix looms and as it did work well enough to not only beat all the other loom fixers in a large mill, in getting production on that section which at the same time was run with so much less supplies than any other section, that the overseer thought for some time that I was stealing the supplies, and when he found out that was not a fact, he came to the section to see how it was done.

You have not been reading fiction, brother, but actual facts, and if you do not care to profit by what you have been told—well, that is your business, of course.

Some of you who have read the articles may have said the systems explained are amateurish—just about like first grade school work, and that, we will admit. They are simple systems, but we have proven, beyond a doubt, that they will *work*; they *have gotten results*, and we honestly believe you will at least have nothing to lose by trying them out.—THE END.

(Thus, with this twentieth installment, we conclude the series, "The Story of Old-Timer's Methods of Working and Management," which started in this department in February 1932 and has continued since, with occasional interruptions. Next month, Old-Timer continues with self-contained articles, or whatever else his active mind develops for us.—The Editor.)

Georgia Cotton Manufacturers Consider Industrial Relations at Meeting

(Continued from page 54.)

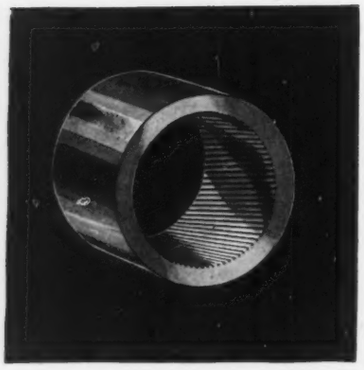
was awarded prize for low net score. W. E. Blake of Atlanta, and J. J. Blank of Thomaston won low net on the first and second nine holes of the course, respectively.

The Saturday morning business session concluded the meeting. The reports of the treasurer, secretary, and traffic manager—all reflecting a year of exceptional activity and service—were heard, and were followed by the election of officers as reported. Resolutions adopted urged continuation and expansion of interest in the growth of superior varieties of cotton; authorized the association officers to continue efforts for reduction in power rates; urged reduction in compensation insurance rates, the removal of the cotton processing tax or the application of tax to competing fibers; endorsed and expressed appreciation for the work of the Georgia members on the Code Authority; and protested against unfair legislation such as the Wagner bills, the 30-hour law bill, etc.

A meeting of the cotton committee of the Association, under B. J. Kane, chairman, was held on Friday morning, at which the new southern mill rules and the raw cotton code were discussed.

Plans to Restore First Georgia Mill

E. C. Westbrook, of the State College of Agriculture at Athens, told the manufacturers at the Saturday morning session of plans started to provide for the purchase by the government of a tract of land on which is located the Old Bolton Mill in Wilkes County, Ga., and for repairing this old historical site. Mr. Westbrook stated that records show this to be the first cotton mill established in the South; that near it is Eli Whitney's workshop with models of his cotton gin. He felt the restoration of the Bolton mill would contribute greatly to the historical interest of the state and attract much attention. The matter was referred to the association's board of directors for consideration.



Less Oil No Spots

THIS is an ideal bearing for textile mill use. The Johnson Bronze Graphited Bearing not only lasts longer than ordinary bearings but requires little or no attention—a few occasional drops of oil adds to its efficient performance. It does not drip oil to cause oil spots on finished goods. The bearing surface of alternate layer portions of graphite and bronze provides 50% more lubricated surface—the dovetailed serrations holding the graphite compound, assure its being retained.

This is only one of the Johnson Bronze bearings for textile use. Ask today for bulletin No. 339-A.

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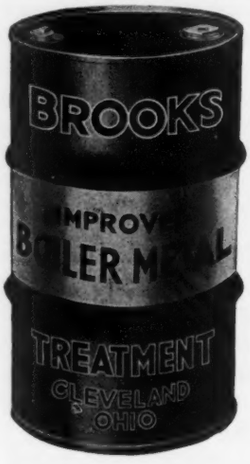
The Constant Change of Boiler Feed-Water

A PEAL of thunder, a flash of lightning, and with a roar, the storm breaks. Quiet brooks become rushing torrents. Rivers overflow their banks. Reservoirs swell and in a few minutes a complete chemical change has taken place in your boiler feedwater—refreshing to Nature but destructive to your boilers.



So constant is the change in your feedwater that Brooks' engineers decided the surest, most economical way to eliminate and prevent scale, pitting and corrosion was to treat the boiler *metal*—hence, Brooks Improved Boiler Metal Treatment.

No analysis to make—no machines to operate. Sure, simple, economical. Brooks Improved Boiler Metal Treatment does the job in spite of this constant change. Write us today for information on a free trial offer.

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GITS **Constant-Level Oilers**

Maintain correct oil levels. Prevents burning out of motors and bearings.

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QUALITY SERVICE

HOW OTHER MEN MANAGE

Practical Discussions by Cotton's Readers
On all varieties of Mill Subjects

Points on Loom Fixing (Part 1), by Ivar Moberg

(We begin here a practical series of articles on loom fixing which we know will be welcomed by many of our readers. This is a subject on which it is very difficult to secure accurate clear information, and we are particularly pleased that we have the opportunity of presenting these comments from a practical mill man.—THE EDITOR.)

WITH the adoption of automatic looms in cotton weaving, numerous defects occur which would be unknown to a weaver on an old plain loom. Also, with the greater number of automatic looms which a weaver now tends, it is imperative that the looms be well fixed and in first-class condition to eliminate as many defects as possible. Otherwise, many defects will occur and pass beyond the comparatively short field of vision before the weaver can detect them.

The less often a defect occurs, the more difficult it is for the weaver or fixer to detect it. Much time and trouble can be saved by going after defects in the proper manner. Full co-operation between the weaver and the fixer helps tremendously in finding and remedying the cause of a defect. What I mean by co-operation between the weaver and fixer is this: Suppose a defect in the cloth has not been detected by the weaver. He should then start to pick out the cloth but not the defect. The weaver should leave three or four uncut and unbroken picks before he reaches the defects, and then call the fixer. This will enable the fixer to see or find out the nature of the defect and where and how it was made.

A good fixer does not commence to fix a defect before he knows what caused it. It is far better to spend some time trying to reason out what causes a defect than to go ahead and alter the loom meaninglessly. It is an old saying that if you get stuck on fixing a loom, leave it for awhile until your head clears. It is safe to say that many a loom fixer has practiced this old saying and found it to work well. As a matter of fact, in a case like this, the fixer had commenced to fix the loom without first finding out what caused the trouble, and in his attempt to fix the loom he has merely so altered the loom that it simply will not run.

We will now give some of the defects which are frequently met with in automatic cotton weaving.

Mis-Picks

We will first take up mis-picks. This defect is caused by the harness motion and it is distinguished by a break in the weave, from selvage to selvage, by an unbroken and uncut pick. Before the three or four picks left by the weaver, as advised above, are removed, we examine carefully the defects to find out whether the mis-pick is of the warp or filling float type. If it is of the warp float type we know that the harness has been lifted when it should have been down. If it is of the filling float type the harness has remained down when it should have been up. Keeping in mind which of these two types the mis-pick represents, we follow one of the misplaced threads through the reed to the harnesses where we note the harness on which it was drawn in. If we have some knowledge about designing we have a tremendous advantage over those who do not, for we can then easily find the misplaced thread and follow it through. Suppose we find the misplaced thread is drawn in on harness No. 2; we know that this is the harness that has not worked in conformity with the design.

If the loom has center cams with spring top, the warp float type of mis-pick, at irregular intervals, cannot readily occur, since the downward movement of the harness is positive. so in this case the defect most likely would be of the filling float type. We now turn the loom over until harness No. 2 comes up, and press it by hand the full distance down. We now allow the harness to come slowly up and if it is sluggish in coming up we know that the spring is too weak or that the sheaves are binding, either by lack of grease, by being badly worn, or by being strap-bound. If the harness comes up easily after being depressed we note if this or the adjacent harness has any protrusion that might get caught and prevent the harness from coming up. In most of these cases we will find that the heddle rod or bar has either become bent or has jumped out of the heddle rod hooks.

If the loom has a dobby, either a warp or a filling float type of mis-pick can occur. If the mis-pick is of the warp float type and is caused, as stated, by harness No. 2, we chalk mark the hooks operating harness No. 2 so they can better be seen in operation. Now we first look for protrusions on the harnesses, as referred to under the discussion of the spring top loom, and failing to find any we examine carefully the dobby to see if all parts operating harness No. 2 works very freely; that there is from ¼-inch to ⅜-inch play between the hooks and the knives when the latter are fully in; that there is about ⅛-inch clearance between the hooks in their lower position and the knives when the knives are underneath the hooks; that the chain cylinder is so timed that it will hold the dobby fingers in their highest position at the time the knives are

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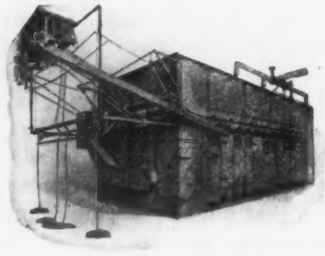
THE WAY TO PRODUCE BETTER WARPS

There is a wonderful improvement in the drying treatment of cotton warps with the new Proctor Air-Dryer compared with the old can-drying, as well as older air-drying methods.

No shaded colors . . . no hard spots . . . no overdrying and no flattened threads. Proctor Air-Dryers furnish natural drying conditions, resulting in superior loftiness, elasticity, strength and uniformity of color.

There are two Proctor Air-Drying Systems for cotton warps and both reflect the superior experience of Proctor Dryer engineers.

One, designed especially for mercerized warps, takes the warps in sheet form direct from the mercerizing machine and dries them in continuously rolling festoons still in sheet form . . . dries them uniformly and efficiently without tension, flattening or baking.



The other type applies alike to dyed, bleached, sized, or mercerized warps and is also a continuous system in which the warps travel over driven rollers through efficiently circulated air.

There is a type of Proctor dryer for practically every textile drying need. Why not let Proctor's experienced engineers figure on your drying requirements? Full details on request.

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REFRESHMENTS ON WHEELS

WRIGHT'S CART FOR HOT FOODS AND COLD DRINKS

contains a Hot Table section for the preparation of wieners, hamburgers and other hot sandwiches; an iced section for the cooling of drinks, capacity of 400 bottles; and a shatter-proof glass enclosed display section for pies, ready-made sandwiches, gum, tobacco and other sundries. Electrically heated and cooled—each compartment will hold its temperature for several hours. An occasional plugging into the electrical circuit between trips through the mill is all that is necessary.

There is no more strolling back and forth from the concession stand to the machines, with loss of time to both employee and employer. Operators can now enjoy a hot lunch or cold drink without leaving their machine.

A few of the many users are:
ARAGON-BALDWIN COTTON MILLS
BEMIS BROS. BAG COMPANY
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CLINTON COTTON MILLS
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Let us tell you more about this money-saving and money-making cart. See your local Coca-Cola bottler or write direct to

WRIGHT CO. 84 LUCKIE ST., N.W. ATLANTA, GEORGIA

in their outward movement and pass under the hooks; and that the pegs in the chain will strike in the center of the fingers and not so near their edges that they will have a tendency to lift the adjacent fingers. If the defect is of the filling float type we, in addition to the foregoing, make certain that the knives and hooks are not so worn or the hooks so bent up at their points that they will strip off the knives under the strain. We now start the loom and watch under motion the chalk marked hooks of No. 2 harness to see that they are working properly.

If the loom has a C. & K. head motion the mis-pick can be either of the warp or filling float type. If our examination of the mis-pick shows it to be of the warp float type, and if we find as in the previous case that the mis-pick was caused by harness No. 2, we examine the vibrator for this harness to see that the tooth in the vibrator gear that first strikes the lower cylinder is not worn out nor broken off; that the lock knife is not so badly worn that it will not hold the vibrator down while the gears are in mesh for the harness change; that the tip of the vibrator is not worn round so that it will slip out from underneath the lock knife nor push this back under the strain, that the vibrator is not too high to properly mesh its gear with that of the lower cylinder; that the lock knife is properly timed so that it will go freely in between the vibrators and hold them down during the entire harness change and that the risers in the chain go in under the center of the vibrator runs and not so near the edges that they would have a tendency to lift the adjacent vibrators. We also make sure that the chain cylinder is so timed that the outgoing risers in the chain have left the run and dropped the vibrators down to their lowest position at the time the lower cylinder gear engages the vibrator gear for harness change.

If the mis-pick is of the filling float type we first examine the tooth of the vibrator gear that first strikes the upper cylinder gear to see if it is worn or broken off; that the chain cylinder is so timed that the risers in the chain have just brought the vibrators to their highest position when the gears get into mesh or the harness change; that the risers will hold the vibrators in their highest position during the entire harness change and that the chain cylinder is not positioned so low that the risers in the chain fail to hold the vibrators high enough for the gears to properly mesh. We also see that the vibrators have not become bent and if we have the slightest suspicion that such is the case, we do not hesitate to take them out and check them by the gauges. It is very important that the vibrators have the correct form.

Sometimes the first tooth of the cylinder gears is so badly worn that it will fail to take hold of the vibrator gears, which results in either a warp float or filling float type of mis-pick, depending upon whether it is the upper or lower cylinder gear that is worn. The remedy is to replace the worn cylinder gear with a new one. If we have a good welder at our disposal we can build up the worn tooth by welding as a temporary repair. Occasionally it also happens that in old chains the risers and sinkers are worn so there is considerable play between them and of course in such a case it is almost impossible to make the risers go in straight under the runs. To take up this play we use ring separators or small washers, which we slip on, preferably between the sinkers. When building the chain we take great care that there is no play between the risers and sinkers on any bar. It needs only the smallest fraction of an inch of wear to make trouble in the weaving for on the 25-harness head, for instance, the wear is multiplied by 25 as play on the outside risers. After gauging and timing the head we turn the head slowly over by hand to see that the vibrators do not begin to rise and fall before the lock-knife has moved out of the way. Otherwise the lock-knife and the point of the vibrators will be worn out in a very short time. We do not test the head by turning it over rapidly by hand as this will not show whether or not the head is properly timed.

If the loom is a Jacquard, the term mis-pick is hardly a proper name and "skips" would be more appropriate since the defect occurs only in a few places across the cloth. If we find some of these "skips" across the cloth we first proceed as before to find the harness on which the "skip" occurred. We then follow the harness through to the hook and its needle, which we chalk-mark. If the skips form a warp float we know that a harness has been lifted when it should have been down. We now examine the cards to see that the blank spaces between the holes are not broken out, that the hook on that pick on which the skip occurred is pressed back from the griffe when the cylinder is fully in, which should be at the same time that the griffe passes the point of the hook on its upward movement. Sometimes, the knots, where the leashes are tied to the harnesses, have not been trimmed closely and the protruding ends, being stiff from the varnish, will lift the adjacent harness. This is often the case with new sets of harnesses.

If the skips form a filling float it indicates that a harness has remained down when it should have been raised. To find the cause of this we locate, as before, the hook that did not lift and mark this with chalk. We now see that the needles move very freely, that the needle spring is not broken or too weak to press the hook firmly against the griffe, that the cylinder is in correct position so that the needle will enter in the center of the hole and that the cards are centered over the holes in the cylinder. To ascertain this we smear some Prussian blue or other kind of non-drying paint on the ends of the needles, start the loom up for a few picks and examine the cards. If these show marks from the needles at the edges of the holes we know that the cards do not center over the needles and must therefore be adjusted by moving the cylinder pegs so that they will hold the card on the cylinder in the proper position. It is obvious that the griffe must move downward far enough to give the hooks a chance to snap over the edge or being pushed away from it when the cylinder is properly timed. To time the cylinder we simply turn the cylinder over until the upgoing griffes come just under the points of the hooks, and time the cylinder so that it will be fully in on the needles.

(The next installment in this series of articles on loom fixing will cover the defects of broken picks, double picks, filling kinks, kinky warps, etc., etc.)

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Here's one of the many comments received from mill superintendents.

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"Then again, we do not have the trouble of circulating pipes becoming stopped up, because the size solution is practically a non-congealing solution, and prevents formation of lumps or caking in the cooking kettles, hence we find it very free from lumps.

"Excessive humidity, I find, is not needed in the weave room for properly conditioning the warps for best weaving conditions. I find no trouble in changing from one car of pearl starch to another, or from one brand of pearl starch to another brand, since the enzyme liquefies pearl starch made by all the different starch manufacturers equally well. **** "

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ARCY

WE invite our readers to make use of this department for the discussion of any and all problems arising in the mill or finishing plant. Questions, answers or letters need not conform to any particular style and will be properly edited before publishing. The editors do not hold themselves responsible for any statement of opinion or fact which may appear in this department unless so endorsed. This department is open to all.

◆ ◆

"Wash" Criticises "R. H. (Ga.)"

Doesn't like the Georgia Cracker's answer about "S. I. C.'s" fly frame problem . . . . . .

EDITOR COTTON:

Of all the articles I have read in this department for over 20 years, the one entitled "A Discussion of 'S. I. C's' Fly Frame Problem", appearing on page 82 of the March issue and written by "R. H. (GA.)" is the height of something or another. "R. H." claims the question as submitted by "S. I. C." floored me. Not yet.

To refresh our minds, let me quote the question as submitted by "S. I. C.":

"If I am starting up a fly frame among others of a different make, and can't get the right flyer speed, hence the front roll speed desired, can I effect the desired change with the gears? Suppose I have a 45-tooth gear on the jack shaft which drives the spindles, and a 48-tooth gear on the top cone receiving motion through an idler from the twist gear. I put a 48-tooth gear on the jack shaft, which causes the spindles to go 48/45 as fast as they did, and I next put a 45-tooth gear on the top cone shaft (a driven gear) which causes the top cone, and hence the front roll, to go 48/45 as fast as they did. The spindles and front roll have now been speeded the same amount, and I have an 18-tooth gear on the bottom cone. What size bottom cone gear do I need to make the frame run? Is it practical to speed up fly frames in this manner?"

Now, in his March letter, "R. H. (GA.)" refers to the answer to this question from me which appeared on page 69 of the January issue. In his sixth paragraph he quoted me as saying "The top cone changes the excess speed; this gear does not affect the excess speed, it does speed up the bobbin * * *".

If the gear in question increased the bobbin speed, then it does affect the excess speed, for there are two speeds on all fly frames—namely the excess speed, the bobbin, and the standard speed, the spindle. Continuing, "R. H." says, "This gear has the same effect as the twist gear. I wonder if 'WASH' changes the excess speed when he changes the twist gear?"

Sure thing, but not the bottom cone gear.

Now "R. H." admits there is no difference in changing the twist gear or top cone gear. Then let him answer the following: Does the change in the twist gear call for a different bottom cone gear? If not—and all practical men know it does not—then how does "R. H." blind us with science with his fancy figuring?

In his eighth paragraph he claims that the change from 45 to 48 teeth on the jack shaft gear will cause the ends to slacken. He gives us a mixture of speeds. According to his reasoning, the jack shaft gear affects the excess speed. Such a change would only in-

The Story of Cotton

This is the tenth of a series of advertisements telling the story of cotton from its earliest cultivation in India and Peru to present times.

X. RECONSTRUCTION

When the War between the States finally ended in 1865, the weary soldiers of the South came home to families in want and to plantations grown up in weeds. Happily, however, they had their horses, which a generous conqueror had permitted them to keep; and in the plantation quarters still lived many of the negroes, faithful even after freedom to their erstwhile masters. And the world was cotton hungry.

So the war-worn soldier hitched his battle-scarred horse to a rusty plow and planted his crop. The crop that year was only a little in excess of 2,000,000 bales, but it sold for as high as 50c per pound. The South heaved a sigh of relief; perhaps the old plantation system would endure after all.

This relief was premature. The following year the crop was poor and the production of Indian and Egyptian cottons had made such serious inroads into the American market that the price slumped disastrously. Stay laws had to be enacted in many states to prevent total ruin. And as a final blow, hard on the heels of crop failures there came the reconstruction policy of the national government, directly contrary to the sane and statesmanlike views expressed by Lincoln and by his successor, Andrew Johnson.

The South was ground under the heel of a military despotism. Fortune seekers from the North, called carpetbaggers because an old-fashioned carpetbag would hold all their possessions, came south to exploit the new freedom of the negroes. These were dark days for the Southerner, and he saved himself only by taking extra-legal steps. Gradually he restored order.

But the old plantation system had been doomed. Lean crops, low prices and the loss of markets to other growths contributed to its downfall almost as much as the unsettled condition of the country. By the end of the reconstruction period, the cotton farmer was for the most part a tenant, working "on the halves." The huge acreages of ante-bellum days had been broken down into smaller farms, and the landed gentry of the old plantations drifted to the towns to seek new callings in a changing world. The Old South was dead, and in its memory, the sons of the Old South had to set themselves to the building of the new.

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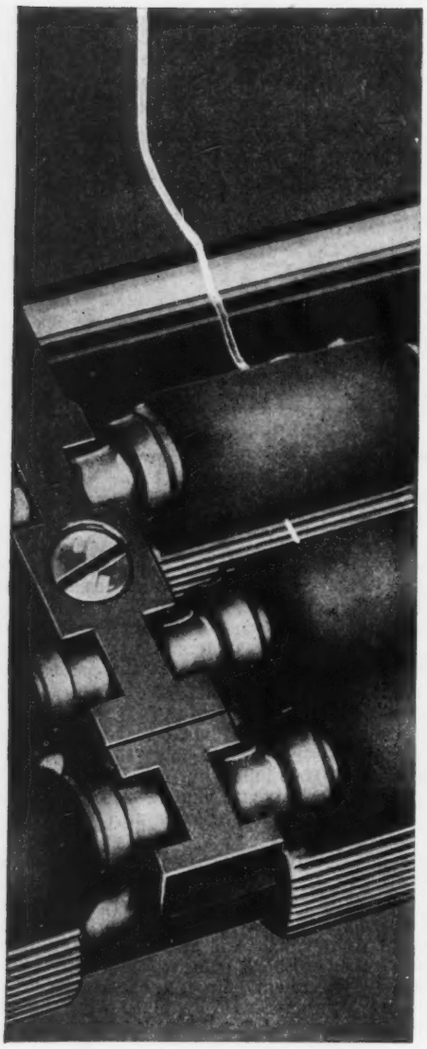

6

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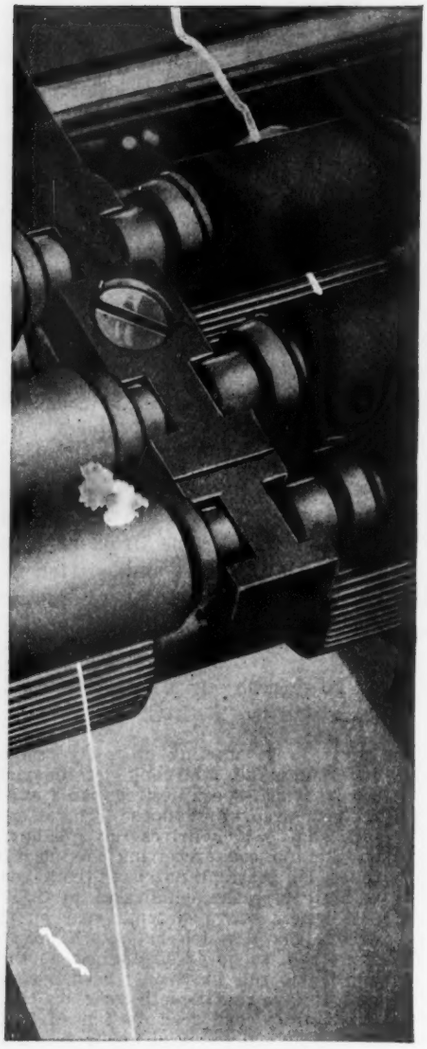

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crease the twist.

To prove that "R. H." does not understand the two speeds on fly frames, the question was no problem at all. If the twist gear was 24 teeth before the change, all that "S. I. C." had to do was to change the gear on the jack shaft from 45 to 48 teeth and put on a 26 twist gear and the problem is solved.

WASH (R. I.)

Still Doesn't Like Back Alley Weaving

EDITOR COTTON:

In the March issue of COTTON, page 78, "CONTRIBUTOR NO. 6234" again writes about back alley weaving, continuing the discussion in which a letter appeared from him in the June 1933 issue and one from me in the November issue.

He suggests, to me in particular, finding out what there is in back alley weaving. That is just what I am trying to find out. He also suggests that I make a test of loom stops caused by the warp in one week. For his information I wish to state that I have made numerous tests of loom stops on different looms running on practically every known cotton fabric. Incidentally, I wish to state that I am fortunate to be connected with one of the most successful mills in New England, manufacturing perhaps the greatest variety of cotton fabrics of any mill in the country.

However, when I make a test of loom stops on a certain type of fabric in a certain type of loom, I do not, in contrast to "CONTRIBUTOR NO. 6234", confine the test to warp stops only. All stops, whether they are warp, filling, or mechanical loom stops, are recorded under their separate heading. The tests I have made so far show absolutely nothing in favor of back alley weaving. On the contrary the tests have shown that it would be very unwise to apply back alley weaving in our mills. The tests given by "CONTRIBUTOR NO. 6234" do not enlighten me in the least as they cover the warp stops only. I wonder what kind of warps he uses in his looms that they should be the cause of so many loom stops.

Sometime ago another textile paper was running a discussion about back alley weaving. The final result was that 56 per cent were against it and 44 per cent for it. Judging by this I cannot be so very far off in my opinion about back alley weaving. There are very few mills in the country which have adopted back alley weaving. Of course, the type of fabric being woven determines to a large extent whether front or back alley weaving should be advocated. It will be interesting to watch the results of this discussion to see how many will be for it and how many will be against it.

In conclusion, I wish to protest about "CONTRIBUTOR NO. 6234" misquoting me in the last paragraph of his letter in March. He quotes me as saying that: "Some old men" will probably apply the adage about an ounce of prevention being worth a pound of cure. I did not say that. I said that: "Some men", not *old* men, would probably apply the old adage. The way "CONTRIBUTOR NO. 6234" quotes me turns my statement into an insulting remark which I would never make. I am no chicken myself, having been employed

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in the textile business for the past 30 years. Many fine points have been given to me by men grown gray in the textile industry and I have the utmost respect for men who have seen the progress in the textile industry for a half century or more. When "CONTRIBUTOR NO. 6234" quotes anybody he should be sure to quote correctly.

In regard to the old adage—an ounce of prevention is worth a pound of cure—I added in the next sentence that this would be all right if the prevention were complete and not a small part of what he would have to cure later. I would be hanged if I would sit in a dentist's chair having my teeth fixed up to prevent a toothache while at the same time an ugly looking blister on my heel was working up a temperature.

I. M. (MASS.)

Card Settings for Long Staple Cotton

EDITOR COTTON:

In replying to the question of "D. H. (N. C.)" in your January issue in regard to the best feed plate setting on cards to give the best breaking strength under the conditions he outlined, I would say that there are a great many things to be considered in the carding and picking department which will either raise or lower the strength of the yarn; also that the spinning frame will weaken the yarn, sometimes, even though the roving is all right.

Before I go on with the card settings, I will give some of the various reasons for weak yarn. First, we have the opening and picking machinery with beater speeds too high, dull beater blades, feed rolls set too close to the beaters, and grid bars set too close to the beater.

Next, we have the drawing machinery, such as drawing frames, sliver lap and ribbon lap machines, which can all do considerable damage to the delicate cotton fibers through the drawing rolls being set too close for the length of staple being run, also the trumpets on the drawing frames being too small and causing too much friction and tension between the trumpet and the calender rolls. The comber can also play havoc with the cotton fiber if the settings are not right for the staple being run.

Now, we will go to the roving machinery, such as the slubbers, first intermediates, second intermediates, and the jack frames. Too close roll settings on these machines can cause a lot of trouble; too much twist at these processes will make it harder for the drawing roll on the succeeding frame, causing the fibers to be weakened.

It is also very important that very strict attention be given to the tension in the roving machines, as too much tension means uneven roving and also uneven yarn, which will result in thick and thin places and a poor break.

Now, to come to the question of "D. H. (N. C.)", he asks for a feed plate setting on cards that will give the best breaking strength. He says he is running a 12-ounce lap with a draft of 120, making a 40-grain sliver from Strict Middling 1 3/32-inch and

1 5/32-inch cotton. These weights and drafts show that he is taking out about 8 per cent waste at his card, this including the invisible loss. It is very essential that he get out as much dirt and short fiber as possible at the card, as short fiber mixed in with the regular fiber will not give a strong break.

For this weight of lap, I would not advise using a closer setting between the feed plate and the licker-in than 10/1000, as the action of the licker-in on the cotton is quite severe and the fiber would be damaged.

I will give here the settings I am using on 1 1/4-inch Strict Middling cotton. I have heard different men talk of setting the doffer to the cylinder with a 5/1000 gauge, also the flats to a 5/1000 and 7/1000. This may sound all right, but it does not work out as there is very great danger of facing up the wire on the cylinder, doffer and flats. I believe the doffer should be set to 7/1000 from the cylinder; if set any wider, the doffer would not take all of the long fiber from the cylinder and the cylinder would fill up much quicker and cause dirty and neppy sliver; also as the web leaves the doffer it will be flakey.

In setting the flats, they should be set as close to the cylinder as possible without there being any danger of their rubbing, and this depends on the condition of the flats and the condition of the floor under the cards. If we have flats that are uneven, that is, high and low, we have to set accordingly, and always setting to the highest flat. If the floor and foundation under the cards is not solid there will be a lot of vibration and this will cause the flats to rub if set too close. I am setting my flats to a 9/1000 and my doffer to a 7/1000; licker-in to cylinder, 7/1000; back plate to cylinder, 19/1000; top of licker-in screen to licker-in, 10/1000; back of licker-in screen to licker-in, according to the amount of short fiber required to be taken out. Mine are set to 34/1000. The closer the setting at this point the more short fiber will be rubbed off the licker-in.

We set our mote knives to licker-in, 10/1000. The closer these knives are set, the more mote and leaf will be knocked from the licker-in.

The under casings—that is, the cylinder screens—are set at the back near the licker-in to 10/1000 from the cylinder; at the bottom, 34/1000; and at the front, 3/16-inch. The feed plate setting is 10/1000. The front or stripping plate is set to the cylinder according to the weight of strips to be removed. The closer this plate is to the cylinder the lighter will be the strips; the further away, the heavier will be the strips. Care should be taken not to get this plate too close to the flats. My front plates are set to 19/1000 from the cylinder, and I am removing an 18-grain strip.

The foregoing settings are used on my cards on 1 1/4-inch Strict Middling cotton and we are making 80s and 85s and getting a break of 24 pounds on the 80s and 21 pounds on the 85s.

I might say in closing that I notice on most cards the licker-in speed runs about 425 r.p.m., which I think is much too high, and I would advise speeds from 275 r.p.m. on very long staple cotton and 350 r.p.m. on short staple cotton.

R. G. (R. I.)

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"My steam-heating equipment is strictly up-to-date and (*so I thought*) as efficient as possible in operation.

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Some Questions for "S. I. C."

I am sorry to say that in his letter on page 108 of the February issue of COTTON, discussing his fly frame problem, that "S. I. C. (N. C.)" has the wrong idea of excess speed on a fly frame. He says, "The bobbins must travel as fast as the spindles, and enough in excess of this speed to wind on the amount of roving delivered by the front roll."

I am not going to try to correct "S. I. C.", for whom I have the highest regard, but I wish he would study the following:

1. The surface speed on the bobbin must equal the surface speed of the front roll.
2. When you increase the speed of the front roll you increase the surface speed of the bobbin.
3. The flyer and bobbin revolve together in order to insert the twist.
4. If we could draw the roving through the flyer without twist we would not want or need the constant speed.
5. Therefore, when you speed the top cone you speed up both the surface speed of the front roll and the bobbin.

WASH (R. I.)

More Card Room Questions for "A. T. G."

But any of the rest of you are entirely at liberty to send your ideas to "Wash" . . . . . .

EDITOR COTTON:

In his "original complaint" against me, published on page 78 of the August 1933 issue of COTTON "A. T. G. (S. C.)" says:

"Lastly, I would like to have 'WASH' ask some questions pertaining to a weave room. His experience, I assume, has taught him some weave room technique, and as a result he is in a position to ask some questions. However, if his long experience has failed to take him through the weaving department, I would be more than pleased to answer card room questions that might seem difficult to him."

Now that was nice and beautiful of "A. T. G.", and I hope he will be a man of his word and answer the following:

(1) The feed roll on a picker is lapping continually. What is the cause and how can I overcome this defect?

(2) On a card the flat comb is unable to comb all fibers from the flats, and a streak of ½-inch to 1-inch appears on the flats. What does this indicate?

(3) On a drawing frame equipped with the "induction principle", the stop motions will not work. What is the quickest way or method to overcome the trouble?

(4) On a slubber in operation, the surface of the bobbin has an appearance that the carriage is dwelling slightly every little while. What does this indicate?

(5) Will the different number of wraps around the flyer presser destroy the true outline of the cones?

(6) "A. T. G." explains the English builder by

Again . . . .

WALTHAM CRAFTSMEN

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pointing out that the rack gear at times will allow a larger movement of the rack on one change of the traverse than on the other. How should you set the rack gear, and how can you determine that the let-out on each side is equal?

(7) When the bottom cone is raised, the spindle and bobbin rotate at the same speed. Then, if one revolution of the differential sleeve will wind three inches of roving when the driving shaft is stopped, how many inches will be wound if the differential sleeve makes one revolution when the driving shaft is up to speed? This is figured out by the rule of three. In answering this question, be careful and not give the bobbin lead system a black eye, like you have the textile school.

(8) Are metallic rolls 100 per cent positive? If not, give the reason.

(9) Every practical man knows that without a change of doublings, draft or twist, the different processes will gain on the other. Explain the reason for this.

"A. T. G." states in the 12th paragraph of his article which appeared on page 71 of the November 1933 issue of COTTON, "He (referring to me) boasts of being practical." "A. T. G." was very unfair to me in what he stated in his entire article, and I am going to bring him to the mourners' bench to make him careful in the future.

If "A. T. G." or any reader can dig up in any of my articles proof that I boast of being practical I will mail the first one a check for $5.00.

If not, let "A. T. G." apologize for his statement.

It is not very difficult to judge which are the practical men contributing to this department.

Read the last lines of the short article written by "CONTRIBUTOR NO. 6288" which appeared on page 78 of the December 1933 issue in answer to my question as to why, "on a fly frame, every little while the ends slacken and pick up again, but in most every case a few ends break down." This man said, "in most cases it is best to change the rack gear an even number of teeth." This man is practical, for he knows that a gear of an odd number of teeth requires a setting of the amount of let-out on each side. While on the other hand rack gears having an even number of teeth on the English builder require no setting.

WASH (R. I.)

How We Pay Slasher Tenders on a Piece-Work Basis

EDITOR COTTON:

I am writing in reply to the inquiry which you recently published on page 87, April COTTON, from "CONTRIBUTOR NO. 6312", requesting experiences with the method of paying slasher tenders on a piece-work basis, as we do this at our mill.

For each style of cloth, we have a standard slasher speed. For each of these speeds, we have a rate per 100 yards. This rate is figured so that these hands will make their base rate at 85 per cent production. These yard clocks read in 100 yards, and are read at changing time for each shift. They work out the same as the hank clocks in the spinning and card rooms. The accompanying sketch shows the manner in which these clocks are applied to the slashers.

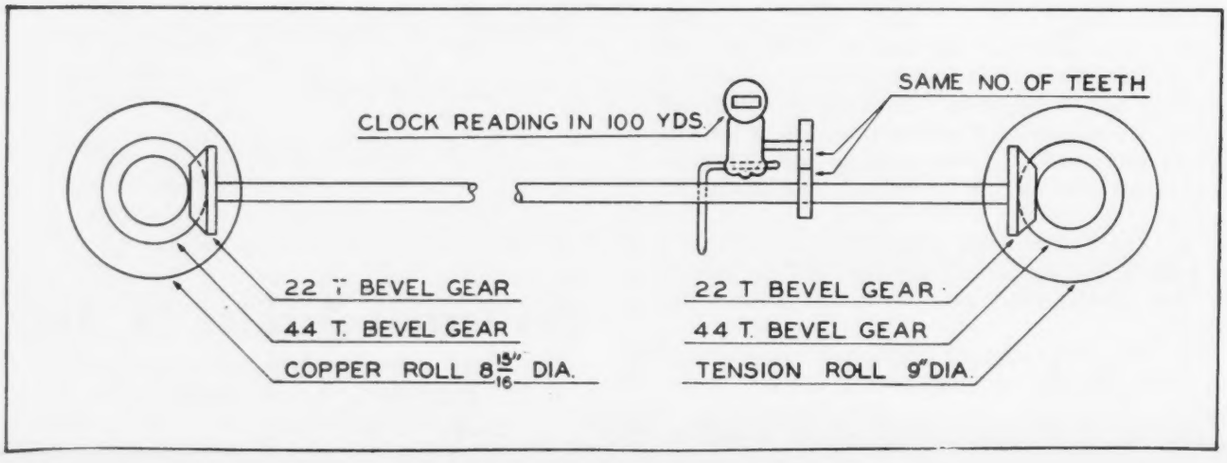
I might explain that we run only two numbers of yarn on our slashers, and have only two standard slasher speeds. One yarn is run from a four-beam set, and the other from a six-beam set. Under the front cone on the slasher, we have a board in which are pegs designating the positions of the cone belt for the two different speeds. By counting the beams on the back, and then looking at the position of the cone belt on the front, it is easy to tell if the slasher is running at the correct speed. We also check our yardage clock readings, and knowing approximately how many yards a slasher will run at each speed, in a day's time, we have another check on the speed.

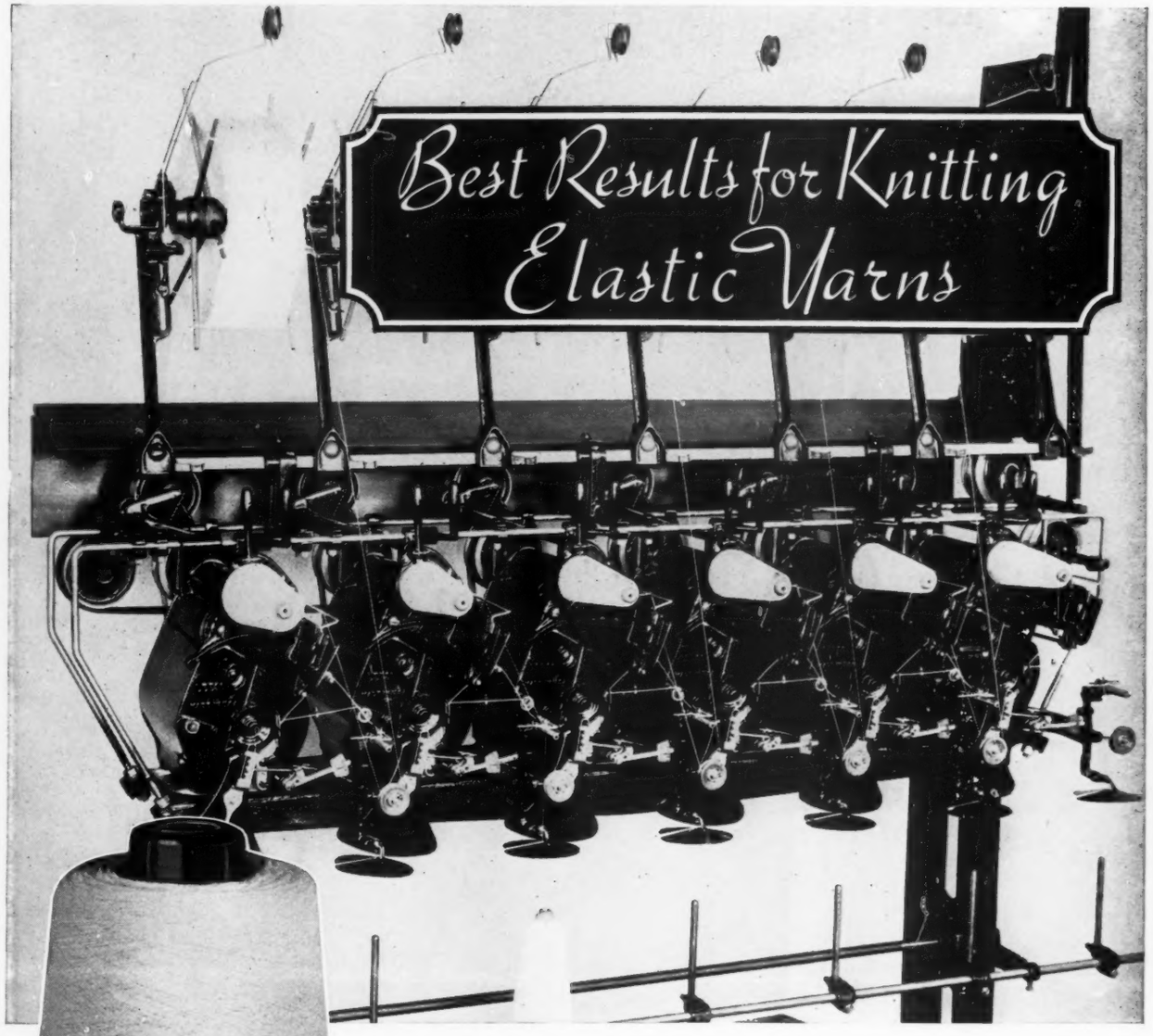
As for quality, the slasher tenders place on each beam a tag showing the style, number of ends, date, etc., and their initials. This tag is hung on the loom, when the warp is tied on, and remains there until the warp runs out. The man whose initials are on the tag is held responsible for the beam.

We have automatic controls on our slashers, and keep a close check on these controls, to prevent any wet warps.

We feel that our slashing has as much, if not more, to do with the quality of our weaving than anything else, and for this reason our weaving overseer spends a good part of his time in the slasher room.

Our production and quality have both increased


SAME NO. OF TEETH
CLOCK READING IN 100 YDS.
22 T BEVEL GEAR
44 T. BEVEL GEAR
COPPER ROLL 8 15/16" DIA.
22 T BEVEL GEAR
44 T. BEVEL GEAR
TENSION ROLL 9" DIA.



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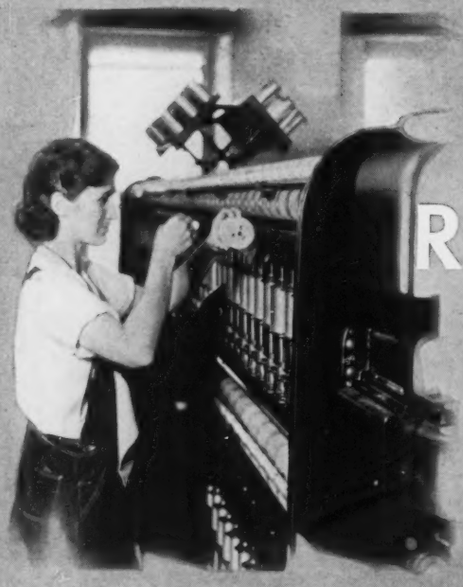

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417

since we began paying by the piece and we think it is a good system.

In further reference to this plan of paying our slasher tenders on a piece-work basis, it is possible that my statement that our base rate is based on 85 per cent production might be confusing. Some might wonder whether this includes the creeling time and other unavoidable delays, and, if so, what arrangement is made for the tender who does practically all of the creeling. I will try my best to explain how we arrive at this figure and how we would determine the figure for other yarn numbers and beam lengths.

We kept a close check on our slashers for a period of two or three weeks. During this time we kept a record of the length of time a set would run and the time required to doff the loom beams and to creel the slashers. By compiling these records it was an easy matter to determine a fair percentage of production on which to base our rates.

If we should change our yarn numbers, length of beams, number of ends, etc., we would get our percentage of production for figuring our rates, in the same manner as we did for the sets we are now running. This percentage might be higher or lower than the one we are now using, and if so we would base our rate accordingly. For instance on very coarse numbers it may run as low as 50 per cent and this would be the figure we would use in figuring our rate.

We run three slashers and use three hands in running them, consisting of slasher tenders and a slasher foreman. These slasher tenders have one slasher and run the third one together. They get paid for the yards run on their slasher and half of the yards on the third one. The slasher foreman gets paid by the hour. He makes all the size, helps creel the slashers, and is responsible for the slasher room in general. These three hands help each other doff the slashers, and when a slasher requires creeling, two of these hands do the creeling, and the other hand looks after the other two slashers. We have an over-head track running over our slasher creels and beam tables and on it travels an air hoist which simplifies creeling a good bit.

It seems to me that the larger the mill, the easier it would be to use this system. The more slashers you run, the more help you require; and the more help you use, the more doubling up is possible when creeling a slasher. In a large mill there would more than likely be a hand for making size besides a slasher foreman. This would give two extra men to help with the creeling.

If there was one slasher which was kept on a style, which creeled a great deal more than the other styles on the other slashers, this would be taken care of by the difference in the rate. This rate would be based on a fair percentage of production, which in this case would be a good bit lower than any of the others and would run this operator's rate of pay per yard higher. This is the reason we pre-determine a fair rate of production for each set. If you think this man deserves more money, due to the extra labor required in creeling, you can set the total amount

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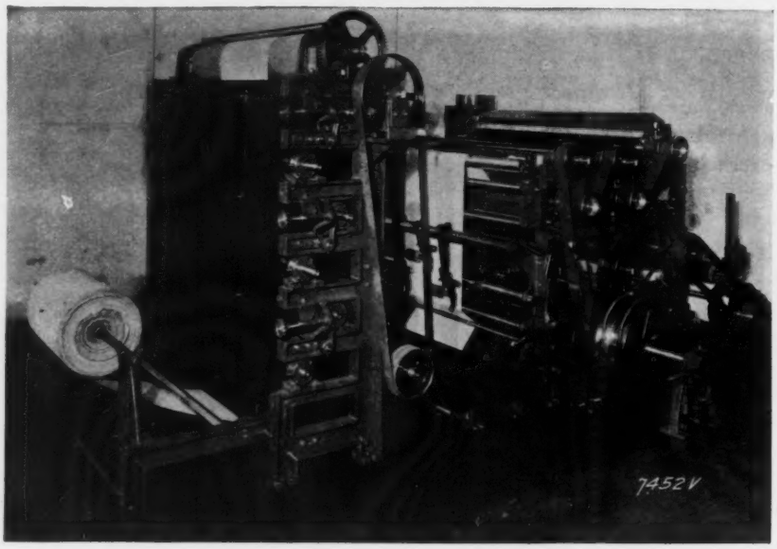

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you want him to make in a week higher than the amount for the other slasher tenders. Then by dividing this amount by the production on which this rate should be based, you will get the required rate to give him this amount.

I hope this will be clear and gives the information desired. I believe this is a system which any mill, no matter how large or small, could use to advantage. In some cases some minor variations may be required.

CONTRIBUTOR No. 6308.

Doesn't Approve of Greasing Shuttles

EDITOR COTTON:

I do not agree with "CONTRIBUTOR No. 6307", page 77, March COTTON, as to his method of using tallow on shuttles. After describing the application of the tallow on the sides of the shuttle, he said, "The tallow in the screw hole may, in very rare cases, soften the wood around the screws, making it difficult to keep them tight. However, this trouble, in my opinion, is more than offset by the benefit derived from the tallow, as it gradually melts out from the heat of the shuttle, getting on the sides of the shuttle and on the leather binders, where it is needed." Isn't it true that since the screw holes are only half way up the side of the shuttle, that if the tallow melts, it will not run up and will get on only the lower half of the leather? In a lot of cases the tallow will not melt out. Where a weekly inspection of the shuttles is made, every time the screw driver is put in to tighten the spring or shuttle eye, out comes the tallow.

A weekly inspection of the shuttles is a good thing; that is, if they are inspected and OK'd by the fixer. The inspection should consist of something like the following:

A loose spring or a loose shuttle eye should be corrected, and it should be made certain that the screws do not go far enough to damage the reed. The quill should be straight in the shuttle, neither too high nor too low. The groove in the shuttle and the wear of the shuttle should also be noticed.

The lining of the loom and checking of the binders and box plates, as given by "CONTRIBUTOR No. 6307" in his article, is good. If this is done properly, I do not think tallow would be worth the trouble and time it takes to put it on. Tallow on a shuttle is soon rubbed off of the top and bottom by its passing through the shed. My opinion is that the only way in which tallow would be beneficial would be to use it at the end of each week, putting it in a thin cloth and rubbing the shuttle all over, but not putting it back into the shuttle box. The temperature and humidity is not the same from Friday to Monday morning, as it was the first of the week. Tallow used in this way might help to keep the shuttle from making changes which it otherwise might make, such as swelling, drying out and shrinking. Tallow used in this way might help in starting up on Monday morning; it might pay for the time it takes to put it on.

H. W. (TENN.)

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"D. E. 's" February Letter Draws "Wash's" Fire

The old boy says "D. E." is like "A. T. G." He cites some previous articles to prove his point, at least in his own mind . . . . . .

EDITOR COTTON:

Well! I see that on pages 113, 115, and 117 of the February issue that "D. E. (R. I.)" comes to the rescue of "A. T. G." and the textile school in connection with my list of questions which "A. T. G." attempted to answer in his letter on page 71 of the November issue.

Talk about "scathing comments", if these textile graduates continue to air their knowledge I am afraid they will be the losers. I fail to see where "D. E." has clarified the subject in any way in his article. He tells us things we already knew, and misleads the readers, as he does in most of his articles which I will prove later. I want to repeat that I have been a contributor to this department for over 20 years, and this is the first time I have ever been called a fibber.

As regards my "scathing comments" as classed by "D. E.", there are two sides to this story. In all my articles I try to protect the interests of all manufacturers. I want to repeat that I am against any student of any correspondence or textile school who never worked in a cotton mill.

By his article I fail to see where "D. E." has done any better than "A. T. G." I will prove it. I will prove also that most of the articles written by "D. E." are very misleading to most readers.

I am now going to take up each paragraph of "D. E's" letter in the February issue and answer them in order, except the first two paragraphs which amount to nothing.

As to his third paragraph, dealing with the question about a breaker lap being larger in diameter at one end than the other, I wish to refer "D. E." to the June 1933 issue of COTTON, where I state in the fifth paragraph of my letter, "The real answer is, in case of oil spraying or running stick waste through the opener, in the first case some of the oil will find its way to the upper end of the conical beater shaft and a lot of stuff will collect where the stock enters the beater box. In the second case, the thread from the stick waste will collect in the same manner and cause the same evil." In other words, the sweep of the collected stock and threads force more stock on one side, and even with a perfect draft through the picker, the most of the stock remains at the side.

"D. E." states, "This, according to 'WASH', was just a trick question". He is wrong; it was the voice of experience.

In his fourth paragraph he describes me as the Baron Munchausen. I want to repeat here that one's reputation is made by his neighbors, and like all creators they make it in their own image.

In the fifth "D. E." claims that I failed to answer the following questions, "On the drawing frames some days we have a tight web between the front roll and the calender rolls. The next day they run slack. What causes this?" I stated on page 59 of the June 1933 issue that, "The real cause is when there is too much waste mixed with the raw stock". You will experience this trouble in waste, knitting and colored mills; also, when fluffy stock is run with wiry stock. In his sixth paragraph "D. E." admits he never experienced any such trouble. In other words, it was a mistake to have tension gears on hand.

In the seventh paragraph, we find "D. E." is interested at last, but he fails to say anything. In the eighth paragraph he makes a lot of fun at the "art of drafting". I will change his mind by the following test which can be made by any reader who has charge of drawing frames. Why argue and take up a lot of space?

In all mills running waste, strips or colored work, very good judgment must be used in setting the rolls. Now, when the reader has a little time, let him set the second line of rolls on any drawing frame $\frac{1}{8}$-inch over the proper setting; in other words, set the second roll $\frac{1}{8}$-inch away from the first line. Next, run the frame, and it will be found that the web will be slacker. Next, move the second line $\frac{1}{4}$-inch closer and start the frame again and it will be found that the slackness will disappear and instead there will be a tension on the web. It is termed the art of drafting because it takes years of experience to know the exact amount to move the rolls to create the slight change desired in the web.

What "D. E." states in his ninth paragraph is silly. He says, "If one tooth of tension is too great a change in most cases, then 'WASH' should know that the tension does not require any change; neither does any frictional contact, as he terms it, need to be increased." The same statement could be made about the draft. Is it not a fact that a tooth of draft is too much in most cases, so we change the back roll gear instead, which is larger?

In answer to his tenth paragraph, if frictional contact plays no part whatever in tension at the point mentioned, as stated by "D. E.", then the webs are always the same. Then what is the good of a tension gear? Both the draft and tension gears are needed when conditions demand their degree of change.

Now get a slant at his reasoning when he states, in his eleventh paragraph, "In one portion of his November letter, our friend 'WASH' contradicts himself in telling us that the figured draft of any machine is never attained, still he gives figures to prove that the draft between the front rolls and the calender rolls of a draw frame is less than 1.00". Is this not a fine example of reasoning?

When you employ figures to find the draft, it is of course the figured draft. I have no method of finding the actual draft. Has anyone such a method?

In the twelfth paragraph of his February letter, "D. E.", like "A. T. G.", shows how much he knows about drafting and frictional contacts, when he says, "He (meaning me) gives this gear as having only 30 teeth, whereas I think if he would increase that to 31 or 32 for leather rolls he would probably find his draft, as figured by gearing, would be over 1.00, but if actual conditions force him to use the 32 gear, I must say

he is running a very, very light sliver."

This comes from a textile school graduate who has made the confession that he thinks there is no such thing as frictional contact. Well, he proves it when he claims that I must run a very, very light sliver with a draft of .969. If he were a practical man he would know that the heavier the sliver, the smaller the tension gear, and the lighter the sliver, the larger the tension gear.

In his thirteenth paragraph, his judgment measures up along with that of "A. T. G." He wants me to size the drawing after making a change in the calender gear to prove that there is a draft at this point. "D. E." is wrong again. You do not draft between the front and calender rolls any more than between the calender rolls and coiler on a card. Owing to the distance, you stretch the web. That is why, when running a very heavy sliver, you have a draft of less than 1.00 in order to cause slack.

In his last paragraph "D. E." commends "A. T. G." —for what, I do not know. "A. T. G." was proven wrong by "K. Y. (MASS.)" and others.

So, let "D. E." answer the following and give his reasons for his commendation.

1. Will the worn leather strips around the cage allow enough stock to pass on to the dust room that will make the lap of a greater diameter at one end?

2. Do you think there is more frictional contact between the front rolls and calender rolls in a fine goods mill than in a waste or colored mill?

3. On any English builder, can the taper be changed without changing the taper gear?

4. If there is no such thing as frictional contact, as claimed by "D. E.", why is the claim made that metallic rolls are positive? If you reject the law of friction between these two rolls, then they too are positive.

In the April 1928 issue of COTTON—to dig up a little bit of "ancient history" on "D. E."—he says in his article on page 610, in the 8th paragraph, "As I have said before, I cannot understand what this pressure of the pad has to do with altering in any way the diameter of the roving."

At the meeting of the National Association of Cotton Manufacturers, September 29-30, 1908, in an address before that body, Fay Hamlin Martin said, "As a matter of fact, the strand as it is laid upon the bobbin is of a less diameter, or occupies less space, at the beginning than it does at the finish of the bobbin. This increase is very gradual and is caused by the pressure of the presser condensing the strand." Now, is "D. E." misleading the boys? What about the Dunn flyer?

In the September 1930 issue of COTTON, on page 1261, in the 16th paragraph of a letter he published in that issue, "D. E." stated, "I would like for 'WASH' to explain to me how he figures the meshing of metallic rolls only takes place on the sides of the rolls so the portion of these rolls which draws the stock does not mesh". The portion that does not mesh crimps the fibers, the meshing is done on the side where the grip is, due to the driving power of the bottom steel roll. Metallic rolls ride on collars and there is always space in the center of the two rolls, so how can they draw?

In the January 1931 issue of COTTON, on page 266,

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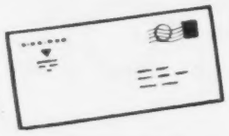

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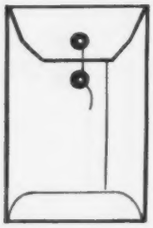

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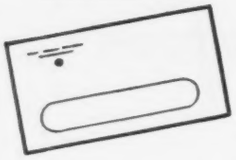

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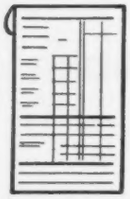

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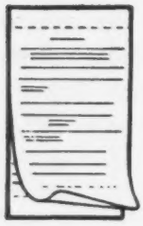

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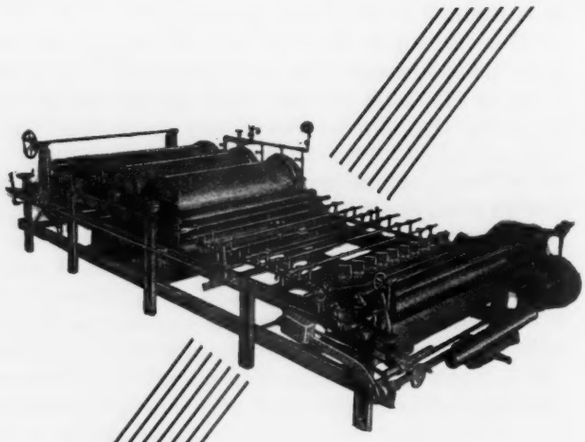

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With our new change gear box, the operator has perfect control of stretch. This device makes it possible for him to keep a record of the stretch obtained and permits him at any time to duplicate the results for any type of warp. This new feature not only makes it possible to eliminate cone pulleys and belts formerly used, but also insures uniform tension throughout the warp.

An added feature is a pressure gauge which gives a reading of the amount of pressure exerted by the quetsch rolls on the warp. When the amount of squeeze is secured that takes off the surplus solution and gives the exact degree of impregnation desired, a record of the reading can be kept and referred to when work of similar nature is required.

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Includes in one self-contained unit, motor, variable speed drive, and reversing motion. This is controlled from every important operating point in the machine. A "creeping" motion permits tieing of broken ends or the making of any other repairs to the warp as easily as if the machine were stopped but with the advantage that the warp has sufficient motion to prevent the quetsch rollers or the size solution from leaving a mark on the warp as they would if the machine were stopped.

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"D. E." states, "In the first place I would like to say that in my opinion I do believe the use of a stripping brush wire on card clothing robs the latter of some of its sharpness".

In the March 1931 issue of COTTON, page 458, "CARDER (MASS.)", who is one of the best writers in this department, states, "From my experience, I can say that the wire on the cards stays sharp as long with vacuum stripping as with the brush, provided both are properly set." "CARDER" is dead right, for Dronsfield Brothers of England assure us that if the stripping brush is set to ⅛-inch, the wire on the cylinder will not be injured.

In the November 1930 issue of COTTON, page 60, "D. E." advises "CONTRIBUTOR No. 4736" to change from a .50-hank to a .45-hank slubber roving to cure hard ends on the intermediates. This is like telling a man to set his house on fire and then try to put it out. "CONTRIBUTOR No. 4726" had a standard twist of .847 for .50-hank, still "D. E." would have him change two teeth on the slack side .

Now I think most of the boys know what would happen on any slubber with a twist gear two teeth less than the standard twist.

I have answered every paragraph of the article from "D. E." in February COTTON. Now let him do likewise.

WASH (R. I.)

Comments on "S. I. C.'s" Fly Frame Problem.

EDITOR COTTON:

I may be a little late getting around to it, but I would like to discuss the question of "S. I. C. (N. C.)" on page 73 of the November issue of COTTON. He says that he is setting up a fly frame among others of a different make, and can't get the right flyer speed and hence the front roll speed desired, and wants to know whether he can effect the desired change with the gears.

Well, I for one don't see why it can't be done, although I don't think it is done very often. He offers the idea of changing the gear that drives the spindles from a 45-tooth gear to a 48-tooth gear, that speeds the spindles. He next puts a 45-tooth gear on the top cone shaft, where there is a 48-tooth gear that speeds the rolls. Now, if he can change the gear on the jack shaft from a 45-tooth gear to a 48-tooth gear and have the gears mesh all right—and that goes for the top cone gear too—I don't see why it won't work. He asks, what size bottom cone gear do I need to make the frame run? Why change the bottom cone gear at all? I don't see but that it amounts to about the same thing as it would if he changed the driving pulley on the shaft to speed up. Of course it will make a different twist constant by changing the gears.

"S. I. C." does not say if changing the jack shaft gear from a 45-tooth gear to a 48-tooth gear makes the spindle speed just the same as the other speeders which he wants it to be like. If so, then why change the top cone gear at all? He could figure the twist

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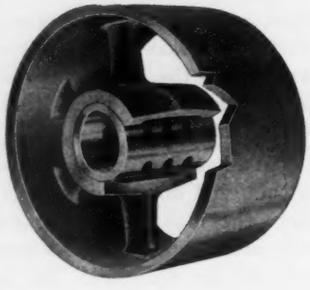

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constant with this new 48-tooth gear on the jack shaft, then divide this constant by the same twist per inch which he is putting in the roving on the speeders of a different make, and I don't see why he would not have about the same roll speed. Of course it may cause confusion to some others changing the combination of gearing different than the makers had it. What I mean is that it might bother some other men taking charge of the carding.

If "S. I. C." changes his jack shaft gear that drives the spindles and it brings the spindles up to the speed of the spindles on the other makes of speeders, then put a larger twist gear on. That speeds up the rolls, also the bottom cone and bobbin gears. I don't see why he will have to change the bottom cone gear, especially if his cone belt is not away back on the cones and he has some leeway there.

Here is an idea that I think is a very good one. Most makes of speeders have a single thread worm on the back roll which drives the traverse. There is quite a pause at the end of the traverse before it starts back, and the rolls will be creased more at this point, especially if the frame is on fine work, and the speed of the back roll is slow. A double threaded worm reduces the pause here by one-half, and saves the rolls from being creased so quickly. They can be made in any machine shop and it is not much work to put them on.

K. C. (CONN.)

More About Proper Card Settings.

EDITOR COTTON:

I notice where there is a lot of discussion going on through COTTON here of late in regard to which card settings are the best for different staples of cotton. After reading the January number and the different articles on this important subject I wish to say just a few words. I think the article by "CONTRIBUTOR NO. 6289", on page 76 of the January issue, hit the nail squarely on the head; I think it is a splendid letter.

I don't believe there are any better settings to be found for 1 1/16-inch staple than those given in that letter by "CONTRIBUTOR NO. 6289". I believe he is a real card man. Any man who cannot get results from 1-inch and 1 1/16-inch staple from these settings had better look around, for there is something wrong with his cards other than the settings.

I think that "CONTRIBUTOR NO. 6172", whose question was being answered in January, is all wrong in setting the front stand to a 17/1000-gauge. In fact it is the first time I ever heard of such a wide setting at any point of the top flat. If he will set every point on the flats to a 9/1000- or a 10/1000-gauge he will find that he will get much better carding; if his flats load up with these settings, the trouble is not in the setting.

The heel of the flats are 3/1000 further away from the cylinder than the toe, so we can see that we get a gradual combing at each setting point if we are setting to the same number gauge at each point, and I for one believe that this is the right way to set the flats for any length of staple.

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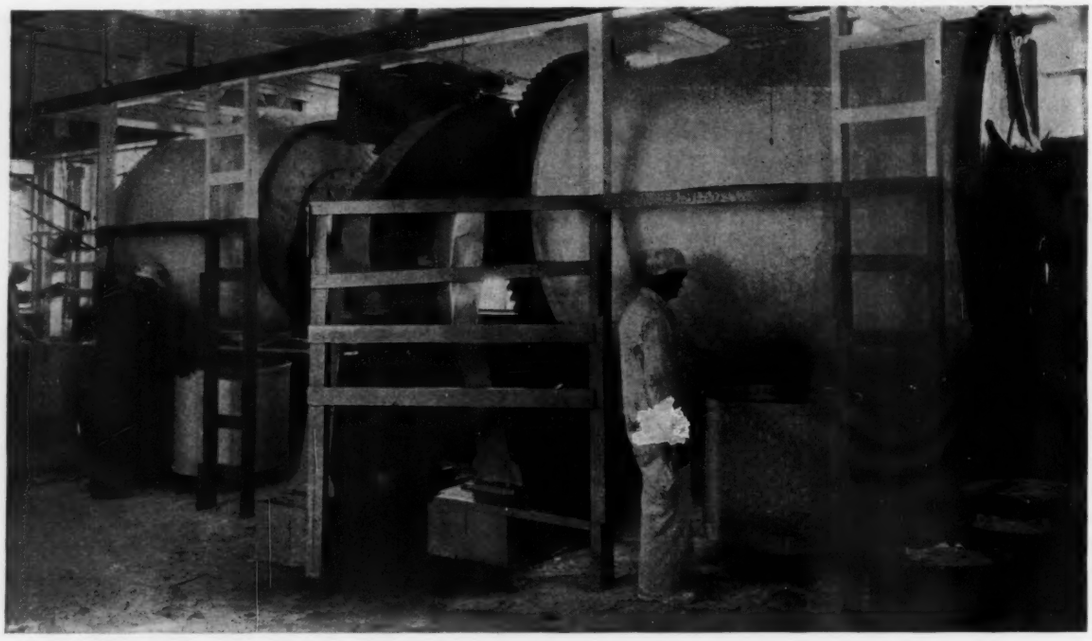

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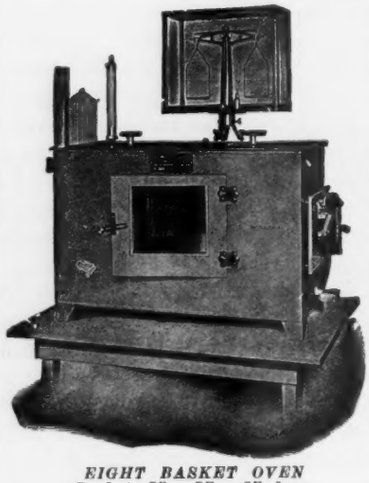

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MELROSE, MASS.

Now, "D. H. (N. C.)" asked what is the best feed plate setting for the best breaking strength on 1 3/32- and 1 5/32-inch cotton. I think 12/1000 is the best, but I believe that a draft of 105 or 110 will give much better results than a draft of 120 such as he is using. I would also advise the following settings on this stock: Cylinder to doffer, 7/1000; flats to cylinder, 9/1000; licker-in to cylinder, 7/1000; mote knives to licker-in, 7/1000 top and bottom; back plate, 17/1000 at bottom, 22/1000 at top; licker-in screen, 9/1000 or 10/1000. Set the stripping plates to 22/1000 at the top and 34/1000 at the bottom. Set the cylinder screen 22/1000 at the back, 34/1000 at the middle, and 5/16-inch at the front. I would like for "D. H." to try these settings on three or four cards and report through COTTON as to his results.

T. H. (N. C.)

Flyer-Lead versus Bobbin-Lead

We suspected it would come eventually. Now "Wash" demands an answer from "those three smart fellows" as he calls them . . . . .

EDITOR COTTON:

Here is a challenge to those three smart fellows, "A. T. G.", "K. Y.", and "CONTRIBUTOR No. 6123":

On all fly frames the intermediate speeds are really so many separate pairs of pulleys connected together. Unequal conditions govern the outlines of the cones. A certain type of flyer calls for a straight outline bottom cone. This is caused by the pressure at the termination of the paddle.

A perfect answer to the foregoing will brand the bobbin-lead system the greatest evil to the production of an even strand of roving or yarn, and I will prove it.

Meantime, let us hear from these three scientific sharks.

In closing allow me to give these three boys a bit of advice. I would have them remember the law of compensation and weigh its importance. It has much to do with life, tests, adversities and hard knocks.

WASH (R. I.)

"K. C." Comes to Life Again!

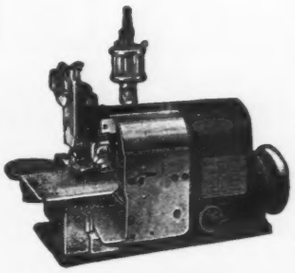
Wants to know where the "long card draft boys" are; and asks "Wash" a question . . . . .

EDITOR COTTON:

I have not seen any arguments in COTTON lately on the subject of heavy lap and long draft versus light lap and short draft in carding. What became of all these boys?

And I wonder if "WASH" still believes that the cone belt drives the bobbin gears alone and unaided on a speeder. If he does I would like to have him explain what makes the bobbin gears revolve when the cone is raised up, and the cone belt and bottom cone is still? I still think it is the tight (or fixed) gear on the main shaft of the speeder that meshes with the gears inside the sun wheel, and that this gear carries most of the load when the cone belt and bottom cone are in motion.

K. C. (CONN.)



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TEXTILE BOOKLETS *Worth Writing For!*

The booklets or catalogs briefly mentioned below may be obtained by any readers of COTTON who will write to the Company issuing them or to COTTON, Grant Bldg., Atlanta, Ga.

2. **Pepperell Equipment**—10 page illustrated booklet showing High Speed Warping from cones as adopted by Pepperell Manufacturing Company after thorough experiments, installation and product photographs. Issued by Universal Winding Company, Boston, Mass.

10. **Leathers, Textile**—Booklet No. 101, 48 pages, illustrated. Showing "Bondaron" Check Straps—Lug Straps—Harness Straps—Pickers—Belting, both round and flat, etc. Horsepower tables and other interesting information. By Charles Bond Company, 617 Arch Street, Philadelphia, Pa.

11. **Whitinsville Rings**—16 page illustrated booklet, describing ring manufacture, measurements, types, uses. How to determine flange sizes. By Whitinsville Spinning Ring Co., Whitinsville, Mass.

15. **The Powers System of Thermostatic Control—"Slasher room is Bottle-Neck of Textile Mill."** 18 page illustrated booklet showing importance of proper treatment of cloth in slasher room and advantages of Thermostat over hand control. Also room temperature control illustrations. Issued by Powers Regulator Co., 2739 Greenview Ave., Chicago, Ill.

21. **Warp Sizing and Composition of Cotton**—Folder containing reprints of articles carried by textile publications of interest to progressive mill superintendents. By Seydel-Wooley Co., 748 Rice St., Atlanta, Ga.

23. **Practice of Rayon Sizing in American Mills, Raygomm, Lakos Gum**—Three booklets on products for sizing and finishing rayon and other textiles, presented by Stein, Hall & Co., Inc., 285 Madison Ave., New York, N. Y.

25. **"Lupogum" and "Monopole Oil"**—Two booklets on textile sizing and finishing products. Jacques Wolf & Company, Passaic, N. J.

28. **Akron Belting**—Practical Rules and general information for users of belting with belting catalog. By Akron Belting Co., Akron, Ohio.

29. **Continuous Card Stripper**—A 20 page booklet describing in detail continuous card strippers, their advantages, the power required to operate, etc. Saco-Lowell Shops, 147 Milk St., Boston, Mass.

30. **Lubrication of Textile Machinery**—32 pages, illustrated. Data covering the economical lubrication of all textile machines. New York & New Jersey Lubricant Co., 292 Madison Ave., New York, N. Y.

38. **Sleaziness in Full Fashioned Knitting**—Illustrated survey with samples of fabric showing causes of sleaziness and methods to be employed in eliminating it.—By Textile Machine Works, Reading, Pa. (This company also issues parts catalog for Reading full fashioned machines with general information on subject of full fashioned knitting.)

62. **Rubber Products for the Textile Industry**—A 40 page booklet giving a wealth of information on the proper selection, installation and operation of rubber belts, together with charts showing horsepower rating, pulley sizes, V-belt sizes, also information on all types of hose and rubber covered rolls used in the textile industry. Manhattan Rubber Mfg. Division of Raybestos-Manhattan Inc., Passaic, N. J.

63. **S-W Paint Standardization Plan**—valuable booklet telling how protective coatings can effect economies in plant operation and maintenance, describing how each surface is finished to best meet its specific needs, giving ideal lighting and sanitary conditions and economies in increased production. Sherwin-Williams Co., 601 Canal Rd., Cleveland, Ohio.

64. **Efficiency and Performance of SKF Roller Bearing Spindles**—A twelve page booklet showing the advantages in power consumption, increased production, savings in lubrication, increased yarn breakage strength to be secured through roller bearing spindles. SKF Industries, Inc., Front St. and Erie Ave., Philadelphia, Pa.

65. **Why Cooper Hewitt Light is Better Than Daylight**—A 16 page booklet explaining in detail the importance of good lighting and the necessity of proper quality as well as proper quantity of light. General Elec. Vapor Lamp Co., Hoboken, N. J.

66. **Dronsfield's Patent Portable Auto-Feed Needle Point Grinder No. 176**—describing a new departure in card grinding—John Hetherington & Sons, Inc., 250 Devonshire St., Boston, Mass.

69. **Monel Metal Equipment for the Textile Industry**—A 50-page buyer's guide and catalog with more than 100 illustrations of various items of monel metal dyehouse equipment. International Nickel Company, Inc., 67 Wall St., New York, N. Y.

72. **The Merrow Butted Seam**—A 16-page booklet defining and illustrating the Butted seam, describing its properties and outlining some of the advantages to be gained by its use in textile fabrics. The Merrow Machine Co., Hartford, Conn.

73. **New Reeves Catalog No. 99**—A treatise on efficiency speed control—including valuable information of special importance to textile industry men and production executives outlining advanced methods of speed regulation. Reeves Pulley Company, Columbus, Indiana.

78. **Booklet L 1289 A—Loom Motors and Control**—giving details of the low installation, operating and maintenance cost of Westinghouse Loom Motors. Westinghouse Electric & Manufacturing Company, Room 2 N, East Pittsburgh, Pa.

88. **Dayton Cog Belt Catalog**—A 32 page booklet full of vital information on power drives, plainly and simply assembled and arranged so that anyone can select the proper standard drive for any condition. It also provides data for the calculation of drives where acquired. The Dayton Rubber Mfg. Co., Dept., C-11, Dayton, Ohio.

90. **Atwood Baaklet**—Describing Atwood Winders, twisters, wire swifts, and various types of feed rolls—useful to throwsters interested in learning the principal features of various Atwood machines. Atwood Machine Co., Stonington, Conn.

92. **Silicates of Soda**—A review of the properties of silicates of soda and their various uses. Philadelphia Quartz Co., 121 S. Third St., Philadelphia, Pa.

95. **Onyx Processing and Finishing Compound Catalog**—A thirty-two page booklet listing and describing entire line of processing and finishing compounds, coverying every process on all types of fabric. Onyx Oil & Chemical Co., 15 Exchange Place, Jersey City, N. J.

97. **Suggestions For The Modern Silk and Rayon Throwster**—describing the various uses for Laurel Brand Products and giving valuable suggestions in silk-soaking, degumming, dyeing, sizing and finishing. Laurel Soap Mfg. Co., Inc., 2600 East Tioga St., Philadelphia, Pa.

101. **Bulletin No. 169-1, Recording Thermometers.** 48 page booklet describing and illustrating how the installation of proper instruments will result in worth-while savings. Foxboro Co., Foxboro, Mass.

104. **Warp Sizing.** National Oil Products Co., Harrison, N. J.

105. **Mildew Prevention.** National Oil Products Co., Harrison, N. J.

106. **Cotton System Warp Sizing on Multiple Cylinder Machines**—a folder showing the advantages of this type of machine in making warps of acetate and other synthetic yarns and spun silk—Charles B. Johnson, Paterson, N. J.

107. **Complete Information on Alemite Lubrication.** Showing how costs can be reduced through proper lubrication. Alemite Corp., 1828 Diversey Blvd., Chicago, Ill.

110. **3-In-One for Industrial Uses**—showing the many industrial uses and advantages of this oil. Three-In-One Oil Co., 70 Varick St., New York, N. Y.

111. **Roll Spacing Determinator**—showing and describing this machine for cotton mills which eliminates the problem of roll setting to the mill man and determines by mechanical means the exact spacing considering staple, character, size and twist. The Belger Co., 36 Pleasant St., Watertown, Mass.

114. **Denman Parts for All Makes of Looms**—showing drawings and dimensions of Denman pickers, hold-ups, bumpers, and bunters made of fabric and vulcanized rubber. Denman Tire & Rubber Co., Warren, Ohio.

115. **How to Cut Cloth Room Costs with Automatic Picking Machines and Improved Inspecting Machines**—Hermas Machine Company, Walburton Ave., Hawthorne, N. J.

116. **Arcy**—Telling in an interesting way the story of Arcy, which completely liquefies ordinary thick boiling pearl starch, and its many advantages. Drake Corporation, Norfolk, Va.

117. **Anti-Friction Bearings as Applied to Spinning, Drawing and Twisting Frames**—This bulletin shows with detailed drawings how a simplified design of roller bearing applications is made to replace the plain babbitt bearings and lists the advantages that are gained. It deals primarily with better continuous production and in consequence freedom from equipment care and repairs. Hyatt Roller Bearing Co., P. O. Box 476, Newark, N. J.

118. **Cotton Picking, Opening and Cleaning Machinery, Cards, Combers, Roving, Drawing, Spinning, Twisting, Rings, Worsted Machinery and Woolen Machinery**—Pamphlets are issued on each of the individual machines. Will be sent to subscribers who make requests on the letterhead of the mill and indicate special pamphlets desired. Whitin Machine Works, Whitinsville, Mass.

119. **The World's Finest Sewing Machines**—a condensed catalog giving details of the various Willcox & Gibbs sewing machines. Willcox & Gibbs Sewing Machine Co., 658 Broadway, New York, N. Y.

120. **Goodyear Mechanical Rubber Goods Catalog**—40 page catalog giving practical information and tables helpful in the selection of the proper belting, hose or packing to suit the requirements of the mill. Goodyear Tire & Rubber Co., Akron, Ohio.

121. **Engineered Packages for the Textile, Dry-Goods and Apparel Industries**—Showing the savings to be made through the use of properly engineered packages of corrugated fibre in the shipping of yarn, woven and knitted products. Hinde & Dauch Paper Co., Sandusky, Ohio.

122. **Water Filters and Filtration Equipment**—Containing complete description of the chemical processes involved in the coagulation and precipitation of foreign matter, the removal of iron, oil, manganese from water and the production of clean water suitable for the textile industry, together with tables of specifications for standard filters, and information showing the extra profits to be made by the mill through reduction in costs and process difficulties, through removal of undesirable impurities in water. Permutit Company, 330 W. 42nd Street, New York N. Y.

123. **An Outline of History for Anti-Friction Bearings**—a treatise outlining the development of anti-friction bearings from their earliest appearance in history to their present important position in industry. Fafnir Bearing Company, New Britain, Conn.

125. **More Light with Lasting Cleanliness**—a booklet pointing out the many advantages of white paint and the qualities to be looked for to get the greatest value in such paint. U. S. Gutta Percha Paint Company, Providence, R. I.

127. **Interesting Facts About Schaaf Greaseless Bar Ring Travelers for Silk and Rayon Drawing and Twisting**—describing in detail these travelers, instructions for installation and their advantages. L. M. Hartson Company, North Windham, Conn.

133. **Vim Tred Leather Belting**—A 32 page booklet describing the "non-skid" leather belting made of VIM Leather—the toughest material known. This new non-skid belt has a ribbed surface which "grips the pulley like a non-skid tire grips the road." E. F. Houghton & Co., 240 W. Somerset St., Philadelphia, Pa.

134. **STA-PUT Lubricants**—A brief description of an entirely new type of tough film lubricants which not only gives greater protection to bearings but eliminates oil drip and reduces lubrication costs. STA-PUT Lubricants are made in grades to suit all types of textile machinery. E. F. Houghton & Co., 240 W. Somerset St., Philadelphia, Pa.

135. **The Pick Method of Weaver Wage Payment**—A manual of practical information describing methods to be followed in using Pick Counters; suggested forms, and tables included. Durant Manufacturing Co., 1932 No. Buffum St., Milwaukee, Wis.

136. **Launder-Ometer**—16 page booklet describing the Launder-Ometer which will tell you quickly whether laundering will cause your products to fade, shrink or deteriorate and just how many trips to the laundry they will stand. Atlas Electric Devices Co., 387 Superior St., Chicago, Ill.

137. **Paramount Dual Heat Hosiery Finishing Machines**—12 page booklet describing the Paramount Dual Heat Hosiery Finishing Machine which gives perfectly balanced heat and reduces hosiery drying to a scientific certainty. Paramount Textile Machinery Co., 538 S. Wells St., Chicago, Ill.

138. **Constant-Level Oilers**—Booklet describing oilers which maintain correct oil level at all times, preventing burning out of motors and bearings. Gits Bros. Mfg. Co., 1851 S. Kilbourne Ave., Chicago, Ill

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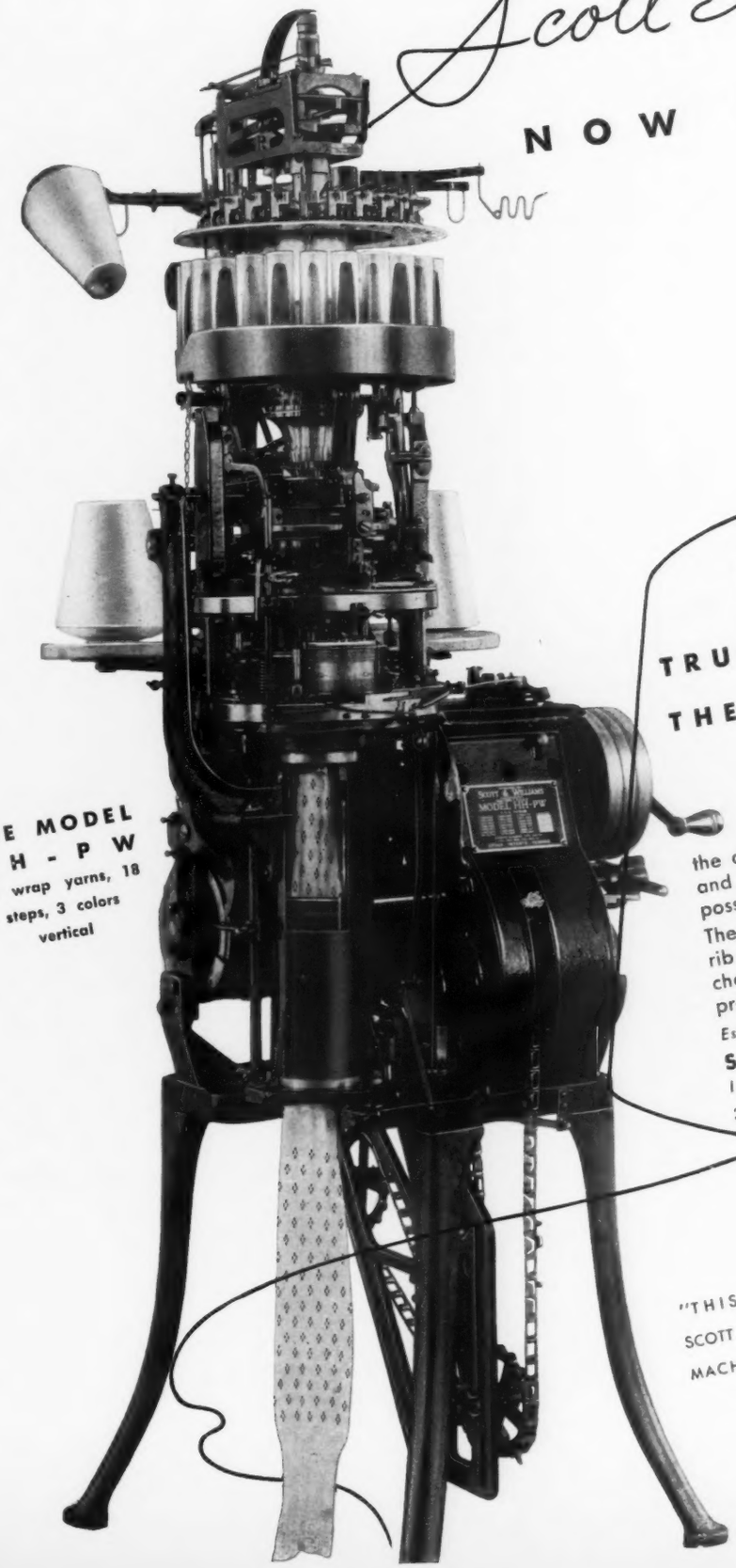

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ROYERSFORD NEEDLES

Alan F. Phipps suggests for the Hosiery Industry

Wanted---A Dictator!

CRITICISM of the action by which the Code Authority of the National Association of Hosiery Manufacturers undertook to put a stop to price cutting and selling hosiery for less than cost was heard among manufacturers leaving the meeting in the Bellevue Stratford Hotel in Philadelphia on April 23 when $5.75 as a minimum price for 42-gauge 4- and 7-thread was discussed and not opposed by vote, although not approved in a record expression of sentiment. Criticism has persisted, and it would appear that mostly it has been of the negative order.

Much of the comment of this character would appear unfair, since opportunity was afforded in open meeting for unrestrained criticism. The fact remains, though, that many manufacturers do not like the stop-loss plan as applied to them as units in the full-fashioned industry. And it is an admission by some of those who were foremost in its support that it has not proved a success in the effort to set a minimum price for 42-gauge stockings. Important buyers for the trade predicted its failure from the hour it was assumed to have been made effective by the Code Authority. Alan F. Phipps, who is widely known in the trade as buyer of women's hosiery for the John Wanamaker store in Philadelphia, voiced his opinion in no uncertain language in a prepared article for publication under his name*.

The crystallization of the hosiery problem, says Mr. Phipps, is undoubtedly production control plus price control. And he suggests, "The old law of supply and demand will take care of this problem if these two control factors are intelligently, officially and properly set up." Since, doubtless, he recognizes the tendency among manufacturers in many industries to follow their proven own policies in matter of ascertaining cost of production and selling, and figuring profits in their own way, Mr. Phipps supplies an answer to questions which he raises in his document, which concluded with, 'Wanted, a Dictator'."

Citing the efforts of "many well-meaning, honest and able manufacturers to straighten out the deplorable condition in the hosiery industry," Mr. Phipps in his comment says the "code which has been set up is by no means fool-proof; that it can be and is being ducked, evaded and interpreted according to the desires of the individual manufacturer and his particular needs of the moment."

Mr. Phipps looks, fair in its face, the question "how to regulate the even distribution of the product of an industry that can, has and probably will manufacture 33⅓ per cent more goods than can or have or will be consumed in this country; how effect price control when elements like hours of labor, rates of pay, North versus South, dishonest buyer, dishonest seller, NRA codes, unions, large manufacturers and small manufacturers all enter, to the greater confusion of the industry?"

For more years than he has lived, Mr. Phipps says, "the manufacturers' association has periodically tried to regulate itself, so that unfair practices be no longer a part of its industry. Its success is debatable. Some good must of course have accrued, but in the past no enthusiastic meeting has taken oath, with left hand on heart and right hand raised to high Heaven, that such-and-such would be so, and it was so until some of the black sheep could get out and use that same left hand to hold a telegraph form and the right to hold a pencil to notify some inside track buyer to get in under the wire, with a wire."

Mr. Phipps asserts in his article for the trade press that from the 23rd of April and continuing every day until he penned his comment "there have been many forms of evasion of the price control element, varying from the honest conviction of the sterling manufacturer that he could produce a good article at approximately eight per cent less than an established price minimum, to the flattering gentleman who put it strictly up to my ability to dope out a way to get around the price-fixing thing."

One "gentleman," Mr. Phipps relates, "asked me if I remembered seeing some samples in March on which he had quoted a very low price. That 'look' in March, according to this last gentleman," Mr. Phipps writes, "constituted a bona fide order for as many dozens as I could use now or future."

Mr. Phipps, in his comment, regarded price control very tangible, almost a mathematical certainty as relates to types, styles, sizes and quantities required against consumption, "but the policing of an industry to enforce such control is a problem." "Our experience with prohibition proves the futility of an organized force to do this job," he writes, following with the question, "But why not results under a dictator? Price control," he continues, "is difficult chiefly because of faithlessness, unworthiness, selfishness and short-sightedness, with a plentiful sprinkling of financial embarrassment rounding out the picture, this applying to both manufacturer and distributor.

"The law of supply and demand works all the time, depression or prosperity—too much goods, low prices; too few goods, high prices; enough goods, fair livable prices. In our economic and social life, fair livable prices must be based on profits that will permit higher standards than mere food, clothing and shelter necessities. These profits will not be secured without price control."

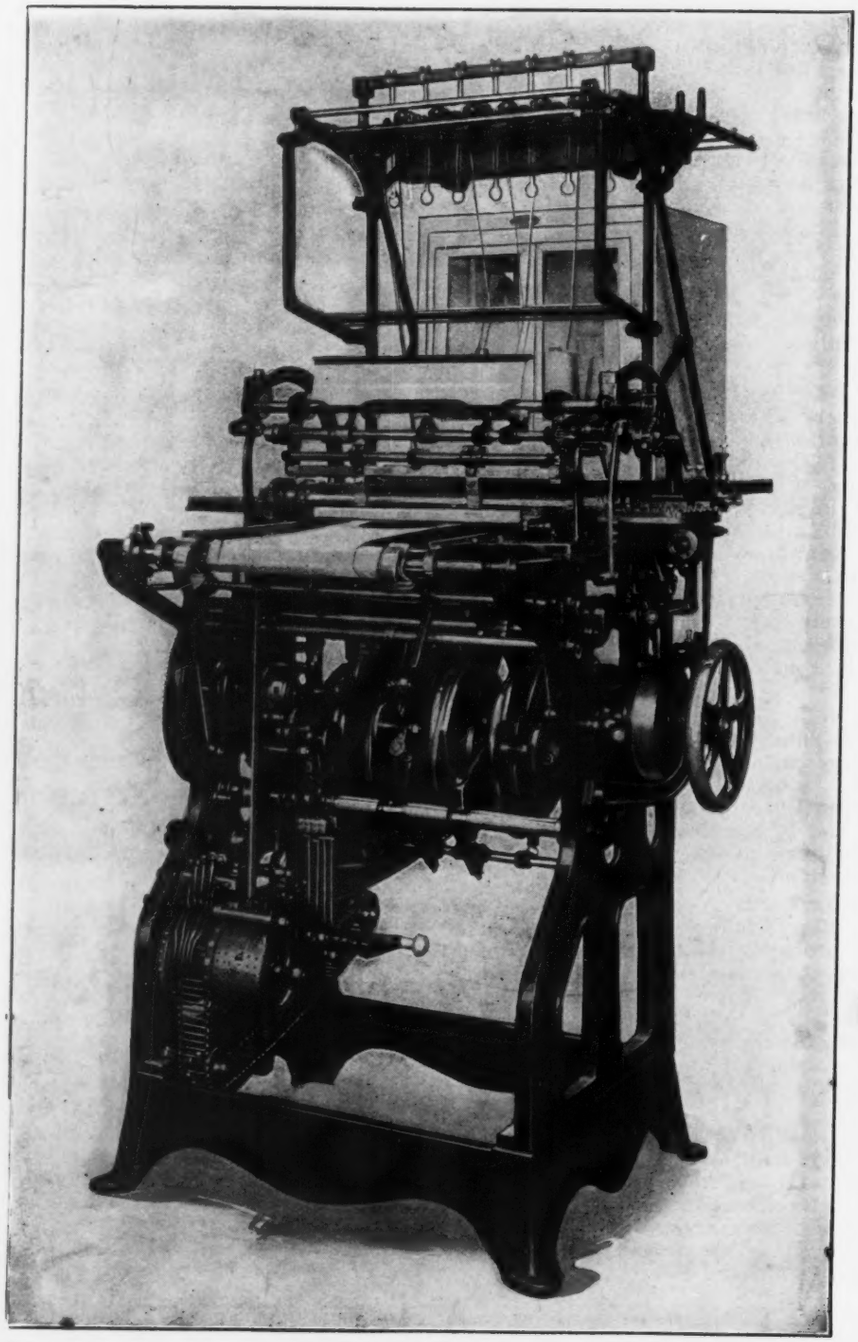
Under price control, Mr. Phipps maintains, competition, which is essential to any industry, will be automatically furnished by the standard of goods available at minimum prices under price control. Business would gravitate to those manufacturers who built up to a standard and not down to a price. He refers to factors of a destructive influence of retail competition to which the manufacturer frequently becomes a willing ally, factors which he classifies as the shoe chain, the unethical cut price shop, the canvasser, or peddler, and the highly competitive retailer.

"The shoe chain which prices merchandise on a markup basis not compatible with profitable retailing is eagerly supplied by manufacturers at the low market and below," Mr. Phipps writes, "and in effect he supplies the chain not only with goods, but with a stick with which to beat themselves, the manufacturers."

The "unethical cut-price retailer" is cited by Mr. Phipps as having no scruples about selling seconds for firsts or exposing one kind or grade for sale by window display or advertising, and selling to the unwary customer other and inferior merchandise.

*"Women's Wear," May 18th, 1934.

Put the WILDMAN Single-Head Full-fashioned Hosiery Machine to Work for You Now!



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WILDMAN MFG. CO.
Full-Fashioned Division
NORRISTOWN
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WILDMAN
THE WORLD'S STANDARD

In a reference to another manner of retailing which he holds is unfair, Mr. Phipps pays his respects to the "canvasser or peddler who can go into many mills with $20 to $100 in cash and leave the mill with a few or many dozens of merchandise to peddle from house to house or office to office with prices which return to the vender a fair living, due to the fact his overhead is mainly on the feet."

"The retailer," Mr. Phipps says in conclusion, "having tried to compete with the chain, the unethical price-cut shop and the peddler, abandons the 'suicide practice' and maintains a policy of meeting competitive stores," and Mr. Phipps illustrates in the case of one department store after another in a group of neighboring stores in almost any city, looks for merchandise with which to sell for less than the promotion sale prices in others, with the result that by the time the circle has been completed, the price, whether established or tacitly agreed upon, has in almost every instance been broken. His answer to the problem which he presents is "Wanted, a Dictator".

A czar for the hosiery industry was favored by Julian Armstrong, a Chicago accountant, some four or five years ago, for the "good of the industry" and for a substantial salary for Mr. Armstrong, after a gentleman of the name of Makem, of Boston, suggested at a meeting in the Manufacturers' club in Philadelphia an organization comparable to the United States Steel Corporation. In each instance it appeared as a majority sentiment of the manufacturers that it were better to again trust to common sense as a dictator, still recognizing the irrevocable law of supply and demand and the inevitable "survival of the fittest" after a period of excesses of disrespect for the code of ethics.

Manufacturers' Reactions Expressed to May Hosiery Code Modification Hearings. . . .

SOME of the more important manufacturers of silk full-fashioned hosiery who attended the hearings in Washington on May 14 and 15 thought, on their return, that several weeks might elapse before action on the briefs presented and arguments submitted will be acted upon by the National Code Authority. It appeared the sentiment that not much of importance to either the industry or the NRA was accomplished.

Interest centered mostly in the plea of Executive Director Constantine of the National Association of Hosiery Manufacturers for a minimum selling price by which sales below cost might be penalized. Favorable action on the proposal of Mr. Constantine would empower the Code Authority to conduct an investigation for ascertaining whether an emergency in the industry exists by reason of cut price competition that leads to less than cost selling. Should the investigation result in an affirmative report, the Code Authority would be expected to submit a schedule of costs.

Necessarily there is much interest in the proposal for so amending the code as to authorize action for designating costs and putting teeth in the provision, already a part of the code, for punishing proved selling for less than cost. Also there is wide interest in the retail and jobbing trade in the proposal submitted at the Washington hearings for removing the hosiery jobber from the jurisdiction of the code. It appears that no opposition to this proposal was heard at the session in which the hosiers were permitted to present their views. Several speakers suggested a price differential in the wholesaling of hosiery to jobbers and retailers.

Appearing for the American Federation of Hosiery Workers, Emil Rieve, president of that organization, presented an appeal for a maximum 35 hour machine week instead of the present 40 hours minimum wages per week of $18 in the South and $19 in the North, an increase of 50 per cent in the rates for all full-fashioned operations and 50 per cent in eleven seamless knit operations. A leading manufacturer selling to the retail trade professes to believe numbers of the larger mills would prefer a 35-hour week while many of the smaller concerns lean strongly in favor of 40 hours. The vice president of the Artcraft Silk Hosiery Mills in Philadelphia is quoted as saying in an interview that "the mill was sold up, needed the current schedule production and that any curtailment would work a hardship to the company."

According to a manufacturer who has attended most of the hearings on codes and modifications, the NRA prefers that the manufacturers themselves agree upon the number of hours for work; he, the manufacturer, doubts that the NRA is willing to assume the responsibility for this part of the regulatory program, lest there be a comeback indicating the curtailment proved excessive.

The frank admission was made by a representative of the hosiery code authority that price differentials were ignored.

A ruling by Dr. George W. Taylor, arbitrator in the hosiery industry for the Philadelphia-Reading section on the subject of needles, not within the jurisdiction of code authorities, has stirred up a hornets' nest in the Reading area. Dr. Taylor ruled some time ago in the case of the H. W. Anthony full-fashioned mill that 50 free needles be provided for every 40-hour shift for leggers and 75 for footers, employer and employees to split 50-50 the cost of needles in excess of these numbers, which, however, usually are sufficient for the designated shifts. The H. W. Anthony organization challenges the ruling of Dr. Taylor, on the ground that he has no jurisdiction in the matter of needles, a basis for distribution of which was agreed upon some time ago by the Full Fashioned Hosiery Association, Inc., at a meeting in Philadelphia, nearly the full membership of approximately 100 manufacturers in attendance. Under that action there was a limitation put on free needles, it being alleged, in instances, that waste or carelessness appeared excessive.

Examining Full-Fashioned Hosiery

By Francis E. Shugert
Ajax Hosiery Mills

THE examination of full-fashioned silk hosiery is one of the most important phases in its manufacture. The reputation of a manufacturing establishment is based more upon the quality of the merchandise which they produce than upon the quantity. This fact makes it highly imperative that the merchandise be subjected to the most rigid inspection in order that all defects may be eliminated.

This inspection, or examination as it is usually called, should be a continuous process, beginning with the legger and continuing with each successive operation, ending only when the merchandise is ready to be packed for shipment.

Each operator should not only recognize his own defects and strive to eliminate them, but he should also carefully check on any defects which may have been made in previous operations. The sooner a defect in a stocking is found and its cause determined, the quicker the trouble can be remedied and much expense saved to the firm. Each operation that is performed on a stocking after a defect has occurred increases the loss in material, labor and overhead.

This of course, is true at all times; but it is especially important in times such as we are experiencing when absolutely no chance can be taken that would result in the loss of a valued account. Careful inspection not only strengthens the firm's position in the industry but also insures a greater amount of steady employment for each and every person in the organization.

Centralized and Decentralized Examining

The examining of hosiery has been handled in different ways by various mills. There was a time when the mender was required to examine the stockings, trim the ends, repair any defects and turn the stockings before sending them on to the dyer. This multiplicity of operations was possible only because the stockings at that time were heavy service weight and were not liable to contain as many defects as the sheer chiffons which are now being made.

It has also been found that more production is obtained when an operator performs fewer operations. This has caused a gradual trend to the establishment of a centralized examining department where the sole duty of the operator is to locate and mark defects. Some mills combine this centralized examining or rather supplement it with persons who inspect the work as it comes off the various machines which contribute to the manufacture. The value of this is to locate the defects as soon as they occur in order to prevent their constant re-occurrence until the work would normally reach the centralized examining department.

Centralized Gray Goods Examining

The most thorough inspection of the hosiery, however, occurs in the gray goods examining department. Here the stockings are placed on forms which revolve and show the defects very clearly in all parts of the stocking. Some of these forms of later design are of the expanding type and subject the hosiery to a much greater strain than they would normally receive by the average wearer.

This is quite an advancement over the old method of examining by the mender who merely pulled the stocking over her hand in order to examine it for defects.

Examining Requires Skilled Operators

The importance of an efficient personnel in the gray goods examining department cannot be too highly stressed. There has seemed to be a tendency in the past, in some mills at least, to place higher grade employees in such operations as looping and seaming, on the theory that it required very little skill or aptitude on the part of the operators in the

Showing one of the examining departments in a plant of the Ajax Hosiery Mills . .

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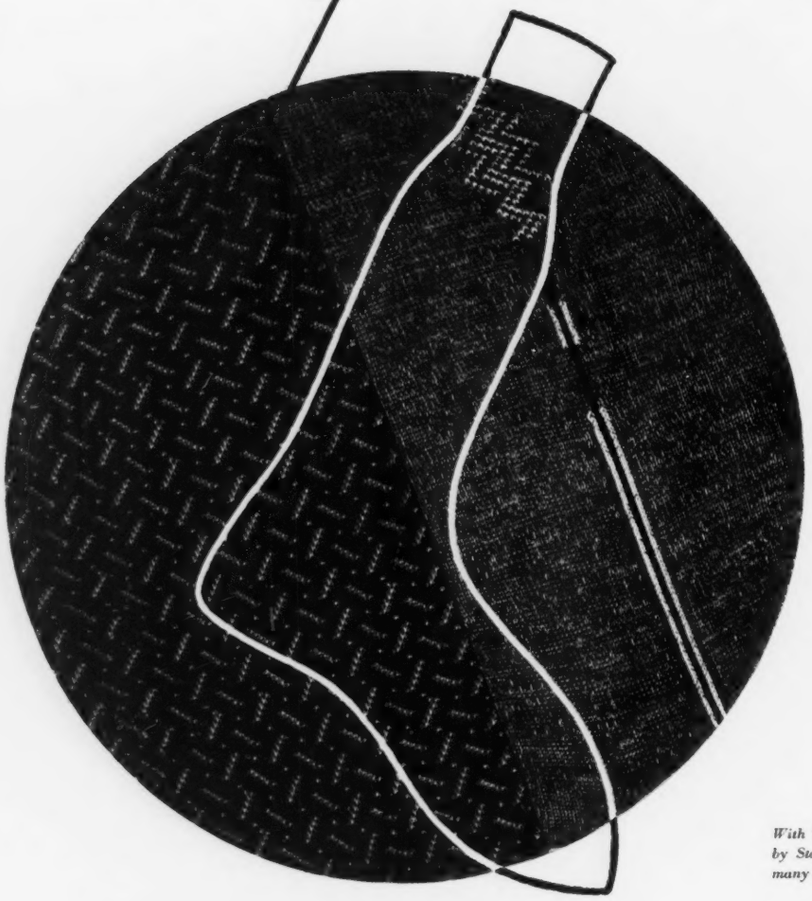

A machine maker builds, and tests, and improves his machines with *fine fabrics* in mind. A manufacturer of knit garments depends, first of all, on *fine fabrics.*

And when we make Torrington needles, our ideal is fine fabrics, too. We know that *good* needles help, and so we do everything we can to make Torringtons as flawless and as uniform as needles can be.

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THE TORRINGTON COMPANY	UNITED BANK BLDG.	GREENSBORO, N. C.
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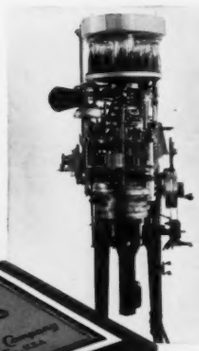

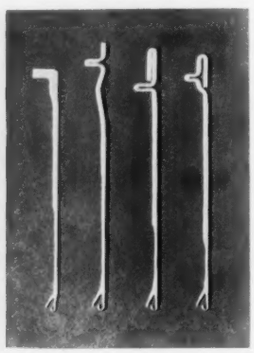

TORRINGTON *Latch* NEEDLES

examining department. This has proven a fallacy and it is now generally admitted that the type of help in this department must be of as high a grade as that of any other department in the mill.

It is in this department that the defects must be detected, which, if allowed to go through the remaining processes of production would cause a tremendous loss to the firm. The examining department can therefore be truly called the "watch-dog" of the organization.

Upon the skill of the operators in this department depends in a great measure the ultimate success of the business. No manufacturing organization can remain in business very long if they attempt to sell defective merchandise and for this reason an efficient examining department is an absolute necessity.

Co-ordination is Essential

It is highly necessary that the operators in this department should not only have good eyesight but a very high degree of mental and physical co-ordination as well. Many persons possess good eye-sight and still may be unable to discern small flaws in the merchandise quickly enough in order to obtain an adequate production. In the manipulation of the examining forms which are now almost universally used for this type of work it has been found very helpful to work out a uniform routine of operations in order that the desired result may be achieved with the minimum of lost motion.

Due to the fact that the eye must follow certain moves which are made by the hands in perfect co-ordination it is essential to make a complete analysis or motion study of the operation. When this perfect co-ordination is attained by the operator the examining process is performed so rapidly that the casual observer is naturally inclined to discount the fact that any degree of skill is necessary to do this type of work.

However, it is not only necessary for the operator to be able to manipulate the form properly, but to be constantly on the alert and to instantly recognize each of the many defects which may appear while the stocking is on the form.

This mental alertness, incidentally, is the chief qualification which should be considered when selecting help for gray good examining.

Several Types of Forms are in Use

Several types of examining forms are used for this type of work, the most common of which is the pole type. This type of form consists of a tubular piece of metal which usually has expanding projections at the toe only. Other types of forms have expansion devices at the heel and leg narrowings. A late type of form is the one shown in the accompanying illustration. In this type of machine a revolving form is provided having movable projections which expand the stocking at the toe, heel, leg narrowings, and the welt as well. This form is being used successfully by a number of mills and makes it very easy for an operator to detect flaws in the stockings at all points where manufacturing defects might appear.

Courtesy, Edward R. Ammon, Inc.

A modern full-fashioned examining form

The expanding projections on all examining forms are operated by pushing a foot pedal located at the bottom of the machine. The revolving form is mounted on the front of a table or cabinet, the top of which is divided into compartments designated to take care of the classification or the source of the defects found.

Labor-saving Forms are being Developed

Several new types of examining forms have been recently developed and placed on the market after a great deal of experimenting. These forms require a much lighter pressure of the foot pedal in order to expand the stocking. They are equipped with an electric motor which operates a compressed air unit that in turn operates the expanding projections of the form.

This device is said to relieve the examiner of a great deal of the physical strain which is encountered in constantly pushing the foot pedal. This physical strain is claimed by the manufacturers to affect the mental alertness of the operator to a great extent during the later hours of the day and renders her less able to immediately recognize the defects in the hosiery. On the automatic machine just described all her physical energy may therefore be devoted to merely pulling the stockings over the form and removing them after the examining process is complete.

The Examining Operation

In performing the examining operation the stocking should be picked up with the left hand and the welt turned inside out in order to locate any possible defects at that particular point. The stocking is then pulled over the examining form using both thumbs and the little finger of the right hand, being careful that no wrinkles are formed until the highest point of the calf projection on the form is reached. Incidentally, the form referred to in this analysis is of the same type as the one shown in the illustration.

The right hand is then withdrawn and the welt grasped with the right hand with the seam on the

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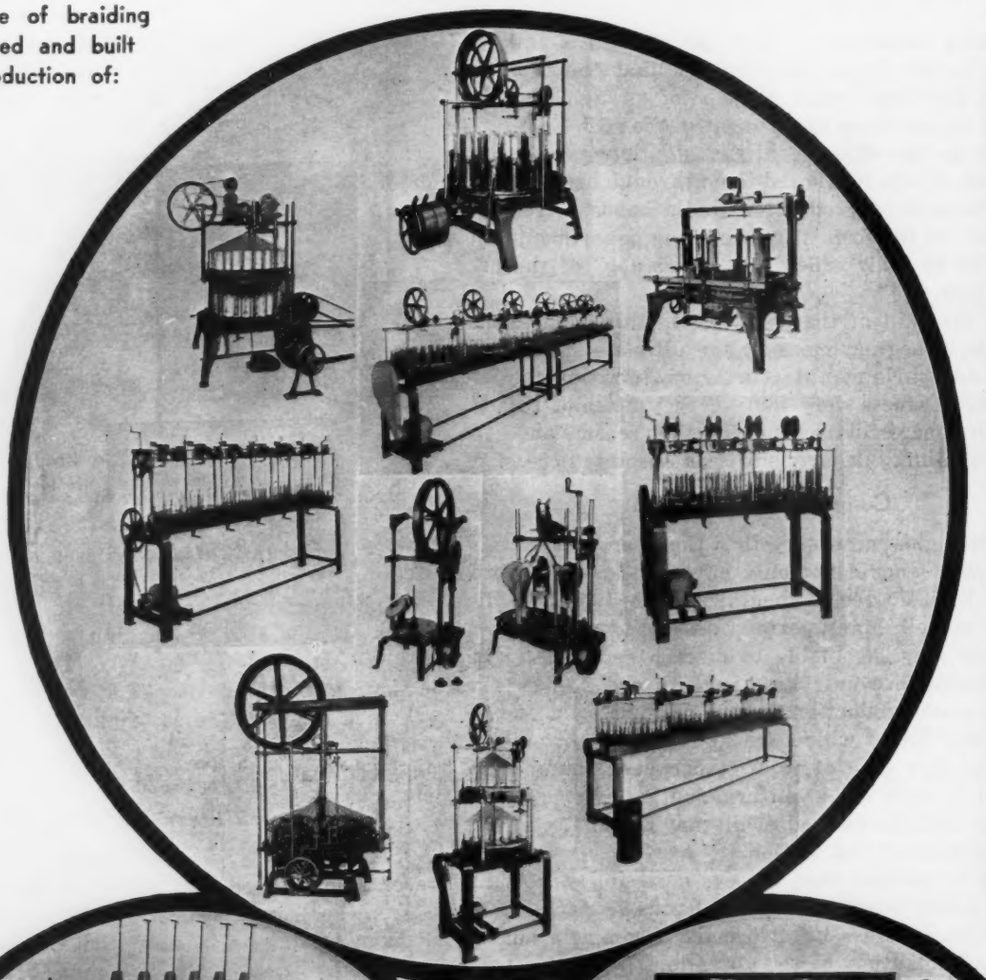

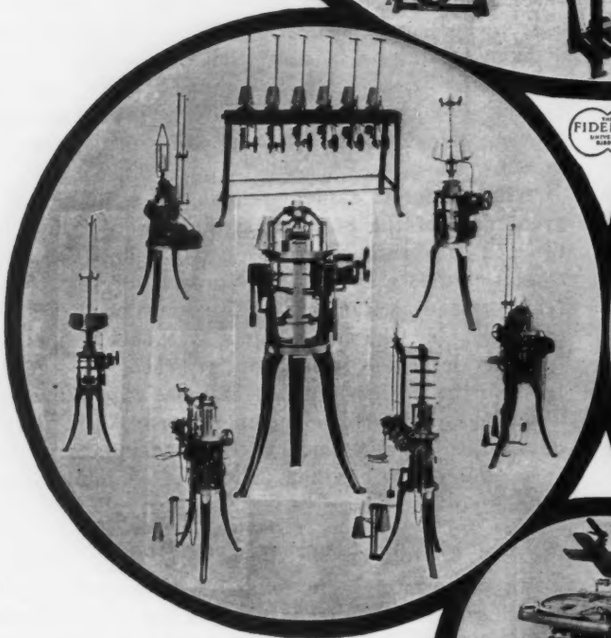

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middle finger. The left hand is then withdrawn. With a quick movement of the right hand the stocking is then drawn on the form until a slight resistance is felt. The left hand is then laid on the stocking over the heel of the form with the thumb on top and then slid up the stocking toward the welt until it meets the right hand. The right hand is then removed from the welt and the lowest welt projection is grasped between the first and middle fingers of the right hand. The welt of the stocking is then pulled with both hands to the right as far as it will go, still holding the lowest welt projection of the form between the fingers. In drawing the stocking on the form the movement of the left hand should be continuous.

The expansion lever is then pressed by the right foot in order to expand the form and exert a pressure upon the stocking which will cause any part that is weak to break out. The stocking should then be examined for defects beginning with the top of the welt and proceeding to the welt narrowing, leg narrowing, heel and toe. If any defects are found they should be marked with colored chalk, recorded on a card or ticket provided for that purpose and placed in the compartment on top of the table which is used to classify the defects according to the departments where they originated.

Up until this time there has been no rotation of the form. This point is mentioned because many operators rotate the form much more than is necessary, thus making their work harder and less accurate because defects cannot be detected while the form is in motion. However, the form is now turned around one half revolution in order to examine the other side of the stocking. Beginning at the extreme end of the toe the stocking should be examined from the toe up to the welt. The form is then reversed back to its original position and the expansion pedal released in order to relieve the tension on the stocking.

In removing the stocking from the form the palm of the right hand should be laid over the furthest welt projection with the thumb extending and the first two fingers on the stocking. The stocking is then pulled off the form being careful to keep the palm of the hand firmly over the form. As the thumb advances to the calf narrowing projection, slide the thumb up over the projection firmly in order to remove as many wrinkles as possible, thus making it easier to pull the remainder of the stocking over this projection.

Continue to push the stocking off the form making sure that the thumb again makes a firm contact with the heel projection. As the stocking nears the end of the form, place the middle finger of the left hand in the depression at the end of the form. The stocking is then taken off the form and the toe pushed through so that it can be grasped by the fingers of the right hand. With the thumb and first finger of the right hand pull the stocking out making sure that the seam slides over the knuckle of the left thumb until the heel is pulled over the end of the thumb. Press the middle finger of the left hand against the thumb and pull the stocking. Turn the stocking over and pull it all the way out thus completing the examining and turning operation. The operations as described above are repeated until all the stockings in the lot are examined.

Different Methods of Classifying Defects

When defects are found in the stockings they must be properly classified and kept separate. Several methods of classifying the defective merchandise are used in various mills. Sometimes the work is classified only into menders and latchers regardless of what portion of the stocking they may be found, and also into seamers and thirds.

Other mills utilize the compartments in the top of the examining table which classify the work according to the department which was the source of the defect. For instance, narrowing holes in the welt or leg narrowing, pull-threads in the welt or in the leg, picot holes, and holes in the welt and leg caused by broken needles are all placed in the same compartment labeled "legger defects".

Narrowing holes in the heel, toe and gusset, holes caused by footer hooks, pull-threads in the foot, and foot defects caused by broken needles are placed in the footer compartment.

Bad loose coursing and topping, broken corners, etc., are placed in the compartment provided for topping defects. Places are also provided for looping and seaming defects and also for such miscellaneous defects as short lengths, cut load-ups, etc.

These defects are then classified as menders, latchers, seamers and thirds, as the case may be.

Dozen Bundles are Filled Out with Odds

In either of the systems mentioned, the menders, latchers, seamers and thirds are marked with identifying tickets and turned in to the odds department. From this department they are sent to the mending or seaming departments where they are repaired and then re-examined.

In some mills, however, the examiners exchange their defective stockings for good odds in order to complete the lot upon which they are working.

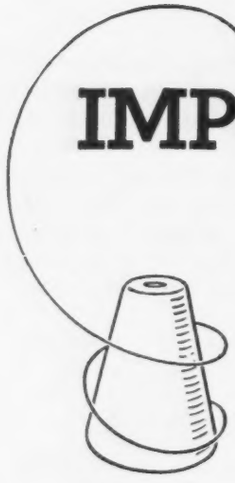
One large mill makes use of a clip-board conveniently located on the examining table within easy reach of the operator. The clip on this board holds a printed ticket or form. This particular mill also uses a system whereby all the work is routed through the various departments in bags containing ten dozen each. The ticket is used for a ten-dozen-bag lot and as defects are found they are marked on the ticket which shows their proper classification.

When the entire bag of work is completed it is taken to the gray goods planning department together with the ticket which serves as a record for the work contained in the bag. The defective work is then re-distributed to be mended or latched and the bag filled up with the necessary number of stockings out of good odds to make the ten-dozen lot complete.

By the use of this system it is possible to keep a

(Continued on page 129.)

THOSE Rich IMPORTED Colors



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ABERFOYLE
MANUFACTURING COMPANY

KNITTING KINKS

Practical Discussions by Cotton's Readers on Various Knitting Subjects

A Discussion of the Parts of Scott & Williams Knitting Machines

Plate XXX (Continued)

(This continues the series of short articles discussing the machine parts on Scott & Williams machines, by taking up in order the various plates in the manufacturer's catalog with which all men using this make of machine are familiar.

The first article, on page 126, October 1932 issue, covered Plate I, Plate II, and Plate III; and the second article oi page 86, November 1932 issue, covered Plate IV. The third article on page 97, December 1932 issue, took up the parts shown on Plate V. The fourth article on page 94, January 1932 issue, covered Plates VI, VII and VIII. The fifth article, on page 101 of the February issue, covered Plate IX. The sixth article, on page 73 of the March issue, covered Plates X, XI and XII. The seventh article, page 84, April issue, covered Plate XIII, and the eighth, page 89, May issue, described the parts on Plate XIV. The ninth article, page 81, June issue, covered Plates XV and XVI. The tenth article, page 97, August issue, discussed Plates XVII and XXI. The eleventh article, covering Plates XVIII and XXII, appeared on page 93 of the November issue. The twelfth article, covering Plate XXVIII, was on page 95 of the January 1934 issue. The thirteenth article, covering Plate XXIX and beginning Plate XXX, was on page 98, March 1934 issue.

It is suggested that in reading these discussions, the reader turn to the plate in question in the catalog and refer to it while reading the comments found in these articles. Furthermore, it will be a good idea to clip these discussions and file them in the catalog along with the plates to which they refer.

The numbers in parentheses following the names of parts are the same numbers used by the manufacturers in referring to the parts in the catalog.—The Editor.)

Plate 30, S. & W. (Continued)

EDITOR COTTON:

The Lower Center Cam

The lower center cam (8254) is of the same type as used on B-5 machines, except that it has a recess ground into one end to provide clearance for the long butt needles when the medium high splice cam is in action. This cam requires little attention other than keeping it tight to the upper center cam bracket (7306) and re-polishing it occasionally.

The Guard Plate

The guard plate (8116) puts long butt needles back into their proper position in the cylinder in case they are forced outward by centrifugal force or for other reasons. Make sure that the guard plate screws (15304) are tight so that the plate is held firmly to the stitch cam bracket. Also see that the guard plate screws do not project through the plate.

The Auxiliary Cam Bracket

To the machine fixer who is not familiar with Model K machines, this bracket with its slides, springs, levers, cams, etc., may appear to be a more or less complicated affair, a pain in the neck, in fixers' parlance. Quite the contrary is true, for the auxiliary

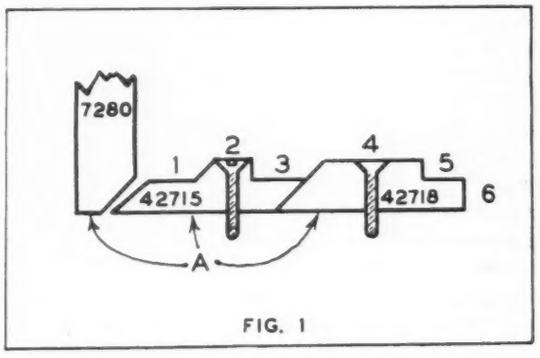

FIG. 1

Steel drum cams and thrust bar supply motion for auxiliary slide cam 7175 . . . .

cam bracket and its component parts give very little trouble if adjusted properly. Ample and positive adjustment facilities are provided for the various slides and cams, a thorough understanding of these adjustments is necessary. Perfect timing is one of the main factors to be kept in mind when making adjustments, as each silde with its cam must go in and act on the needle butts and come out at a given time. Guess work or hit-and-miss adjustments are simply out of the picture, as the machine fixer will find out in a hurry when he's wrong.

The action of the auxiliary side cams (7720, 7721) and lower jack cam (7930) on the cylinder jacks which are placed under alternate needles causes half of the needles to run at an upper level, and half at a lower level directly in front of the auxiliary cam bracket. All of the cams attached to the respective slides act only on the needles which run at the lower level. The division of needles is to permit making up or starting the hem fabric on the empty needles and to permit transferring the hem loops to alternate needles when the hem is completed.

First we will consider the auxiliary slide cam (7175). This cam is actuated by the lever (8383)

which in turn gets its motion from the thrust bar (7280) and cam (7272), the latter being raised and lowered by a series of cams located on the main drum. The slide (7175) when in action guides the needles which run at the lower level under the stitch cams during the make-up and anti-ravel courses. The auxiliary slide cam (7175) moves in six steps for the complete operation of hem make-up and transfer loop forming, two steel drum cams supply the movement which is as follows: First, half way in to lower the long butt needles; second, fully in to lower all needles; third, half way out to clear the short butt needles; fourth, fully in to lower all needles; fifth, half way out to clear the short butt needles; sixth, fully out to clear all needles. (See Fig. 1.)

The combined motion of the main pawl plate acting on the rack wheel and the auxiliary racking pawl plate acting on the tooth plate (42429—Plate 8) is required to make the necessary drum moves for the hem make-up.

A simple method of adjusting the slide cam (7175) is to rack the machine around until the thrust bar (7280) is up on Step No. 1; then adjust the eccentric button (7448) so it will hold the face of the slide cam about 1/32-inch from the short butt needles. Next, rack the machine until the thrust bar is on Step No. 2; if the button adjustment is correct the end of the slide cam (7175) will clear the cylinder walls sufficiently to prevent rubbing. Make sure that the slide cam (7175) draws the needles down far enough to avoid striking the point of the right hand stitch cam. This is especially important if the stitch cam is of the swivel type as used with fashion mark attachments. (See Fig. 2). See that the slide cam (7175) works freely in the bracket and that the spring (6768) does not bind in the spring pocket (6736).

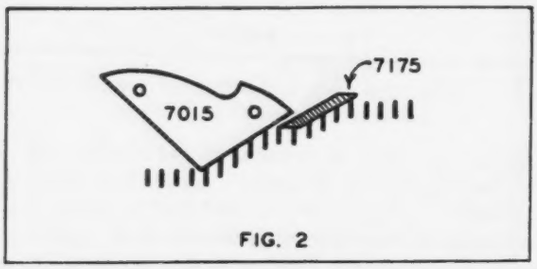

FIG. 2

Auxiliary slide cam guiding needles under stitch cams, during make-up and anti-ravel course . .

The Auxiliary Feed Cam Lever

The auxiliary feed cam lever is operated by the thrust bar (8272) and cam (8451—shown on Plate 29); the necessary up and down motion of the thrust bar (8272) is supplied by a steel cam (42614)—shown on Plate 7) which is located on the main drum. The thrust bar (8272) must work freely in the lower guide plate (7017—Plate 5) and through the auxiliary cam thrust bar guide (8256). Loose guide screws (15256) will allow the guide (8256) to move back and forth, cause the thrust bar to bind, and also prevent the lever (8472) from moving properly. Be sure that the stop screw (10210) is set right. It should be turned downward just far enough to take all up and down play out of the lever (8472) and still permit the lever to move freely.

The Slides

The auxiliary raising and front dividing cam slides (8387-8386) are operated by the auxiliary feed cam lever (8472); adjustments are made with the adjusting screw (15282). The auxiliary raising cam (8285) which is attached to the slide (8387) acts only on the long and medium butt needles whenever the lever (8274) moves inward. A stop pin located in the auxiliary cam bracket prevents the slide (8387) from moving in too far. When the slide (8387) is fully in, the tail of the slide rests against the stop pin and thus prevents the cam (8285) from coming in contact with or rubbing against the short butt needles as they pass in front of cam (8285).

In fitting up a new auxiliary raising cam (8285) make sure that the face of the cam is concaved to fit the outside circle of the short butt needles. This will help to get a better hold of the medium and long butt needles and prevent them from being bent or broken by slipping of the raising cam. See that the lower point of the raising cam (8285) is well below the lower needle level, so in case the cylinder is lowered while the cam is acting on the needles, the butts will not strike the point of the cam at *A* in Fig. 3.

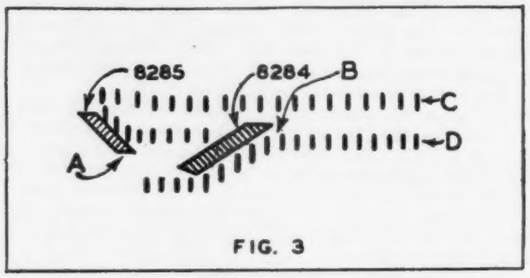

FIG. 3

Shows needles being raised by 8285 and lowered by 8284. Note clearance at A and B.

The front dividing cam slide cam (8284) attached to the slide (8386) acts only on the needles which run at the lower level. When the front dividing cam (8284) is in action it brings all lower level needles down still lower than their normal position. This is necessary to provide space for the transfer jacks to come out between alternate needles for the transferring operation.

The top of the left auxiliary side cam (7720) raises the needles which have been lowered by the front dividing cam during the hem transferring operation. (More information regarding the hem make-up and transferring operation will be given in the discussion of Plate 31.)

The front dividing cam (8284) must by all means be held tight to the slide (8386) and it should also have a concaved face in conformity with the needle butt circle.

As a rule it is safe to set the front dividing cam so the upper point (shown at B, Fig. 3) comes half way in between the upper and lower needle butt level. This gives ample clearance at this point to permit the cylinder to raise or drop without danger of having

the needle butts striking the point of the cam.

The actuating plate (8455) keeps both slides (8386-8387) working in unison so that both move in and out according to the movement of the lever (8472). The movement for the slides (8386-8387) is supplied by a steel drum cam (42614, Fig. 4) and is

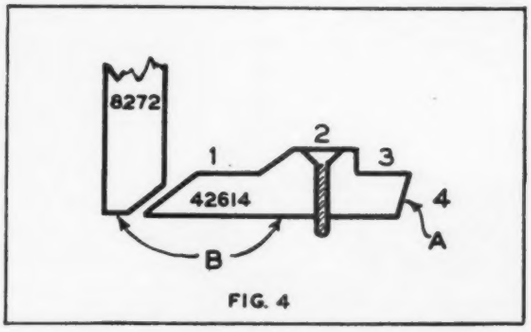

FIG. 4

Steel drum cam and thrust bar supply motion for slides 8386-8387. Back of cam shou'd be shaped as shown at A . . . . . .

transmitted to the slides by the thrust bar (8272) and cam (8451) and the lever (8472). The slide (8386) and cam (8284) move in four steps; first, half way in; second, fully in; third, half way out; and fourth, fully out. Slide (8387) and cam (8285) move in only two steps, namely half way in to act on the long and medium butt needles, and fully out to clear all needles; two moves being absorbed by the spring (10028) and pocket (10020). A balanced adjustment between the two slides (8386-8387) and their cams can be gotten by using the double slide stop screw (10022). This screw permits adjusting the slides so that they work in harmony according to the respective positions necessary for each slide as they move in and out.

In the beginning of this discussion I said that perfect timing was one of the main factors to be kept in mind when adjusting the various parts of the assembled auxiliary cam bracket. The motion of the different slides and their respective cams is simply *in* and *out*, and is controlled by the different heights of the respective drum cams. It is entirely possible and very often occurs that the in and out adjustments are correct and still the slide cams give trouble. Frequently after making adjustments the fixer will check over each move, turning the machine by hand, and find everything right; then as he tries the machine by power he still has trouble with broken needle butts, etc.

When such difficulties show up it is an indication that some particualr part is not doing its work *at the proper time*. It may be caused by the auxiliary racking pawl mechanism being timed too early or too late, by drum cams being worn, unnecessarily ground off, or loose on the drum. Broken slide springs, lack of lubrication causing the slides to bind, thrust bars binding and numerous other minor ailments, all of which can be included in the timing factor. The experienced Model K man has little difficulty in locating and correcting timing troubles. The apprentice, however, very often becomes confused and does not know whether to set a certain slide or cam further in or out or whether to change the time when it goes in or out. If there is the slightest doubt I would suggest first checking up on the in and outward movement of the different slides and cams; then see that the timing is correct.

WE invite our readers to make use of this department for the discussion of any and all problems arising in connection with the knitting mill from the office to the packing and shipping departments. Questions, answers or letters need not conform to any particular style and will be properly edited before publishing. All questions will be answered as promptly as possible. The names and addresses of the contributors must be given, but will be held in confidence and a pen name substituted when printed. All acceptable contributions other than questions will be paid for after publication. The editors do not hold themselves responsible for any statement of opinion or fact which may appear in this department unless so endorsed. This department is open to all.

◆ ◆

The Double Sole Cams

These cams are similar to those used on B-5 and B-3 machines, consisting of a leading, center and rear double sole cam. The action of the Model K double sole thrust bar on the leading and center double sole cams is identical with that on B-5 and B-3 machines. The rear double sole cam on a Model K is slightly different from those used on plain machines. This cam, instead of having an abrupt drop off the end, is tapered so as to permit the double sole finger to work in conjunction with the medium high splice cam (8304) which divides the needles during the splicing operation. The usual method is to set the double sole thrust bar eccentric to make the leading double sole cam lift the yarn finger high enough to disengage the splice yarn. The rear double sole cam can then be shimmed or tapered down to make the sole yarn enter the needles properly.

Once more the timing factor must be taken into consideration. In order to give the double sole cams a reasonable chance to do their part, the outside sinker ring must be timed properly in relation to the needles.

Double sole cams cannot be adjusted circumferentially except by moving the outside sinker ring. Some machine fixers unnecessarily grind double sole cams because they are too lazy to re-set the outside sinker ring.

The leading double sole cam (6375) will in time become worn or cut by constant contact with the double sole thrust bar. The useful life of this cam can be greatly increased if the fixer will watch this cam carefully, remove, polish and above all re-harden this cam as soon as a gap begins to show. It must be remembered that double sole cams are case-hardened, consequently prompt attention must be given to repolishing once the outer surface becomes worn. A worn leading double sole cam will cause unnecessary wear on the double sole thrust bar, make it difficult to control the double sole finger, and put a heavy strain on the outside sinker ring. If a fixer spends three dollars worth of his time trying to squeeze a little more service out of a worn out fifty-cent double sole

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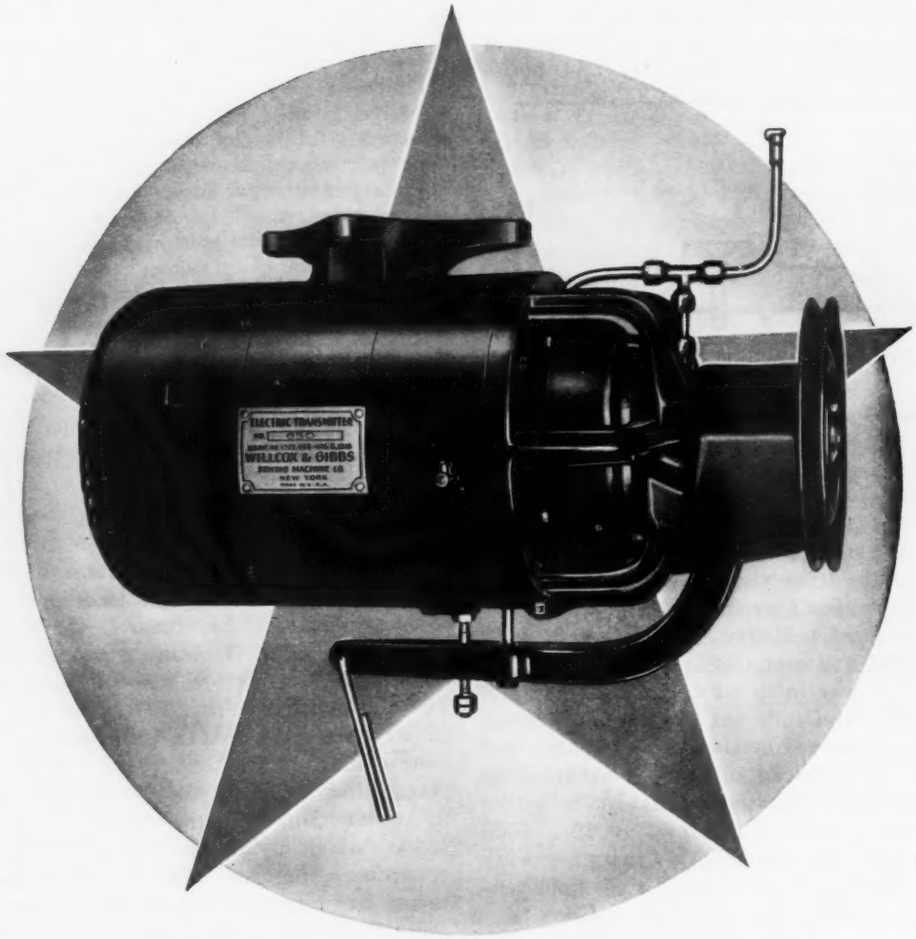

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cam, he is surely "headed for the last round-up"!

The next discussion in this series will cover the parts shown on Plate 31 in the Scott & Williams catalog.

CONTRIBUTOR No. 6038.

A Full-Fashioned Question

Can you knit the exact courses that a stocking is to have when finished? How do you regulate this? Full discussion is invited . . . . . .

EDITOR COTTON:

For some time we have had a difference of opinion in our plant as to the relation between the fabric knitted on the full-fashioned machine and the finished article. Some in the organization claim that a stocking should be knit tight on the machine, then finished soft and pulled on the board to get the desired number of courses per inch in the finish. Others contend that the stocking should be knit the exact number of courses on the machine that it is desired to have when the stocking is finished and then finished in such a way that the stocking is neither stretched nor shrunk.

I have spoken to a number of manufacturers from time to time and there seem to be two schools of thought on this particular problem. The one claiming that the stocking should be knit tight on the machine, finished soft and pulled on the board; the other that the stocking should be knit practically the same number of courses on the machine as is to be expected when the stocking is finished.

I would like to get the thoughts of your readers on this matter, to know just how they handle this problem in their plants; whether or not they knit a stocking, for example, 54 courses per inch on the machine and expect it to finish 50 courses, or whether they knit a stocking 54 courses per inch on the machine and expect it to finish 54 courses per inch.

CONTRIBUTOR No. 6322.

Examining Full-Fashioned Hosiery

(Continued from page 123.)

very close check on all defective merchandise as well as a record of what defects are predominating from time to time.

Examiners Must Concentrate

Due to the exacting nature of the work it is impossible for an examiner to attain a maximum production unless she has the ability to concentrate. The operator cannot carry on a conversation with those around her and examine stockings at the same time. Her attention should be devoted closely to her work and her movements should be timed perfectly and a certain degree of rhythm obtained if she expects to get a good production.

And incidentally in these days it is the operator who produces the greatest quantity of merchandise and who can be depended upon to detect all defects as they pass through who is most likely to be kept on the job when orders are scarce.

The most efficient examiners are those who take their work seriously and assume the same determination of attitude as the French when Paris was threatened who chose as their slogan "They shall not pass".

Handling Odds in the Finishing Department

EDITOR COTTON:

With reference to the inquiry of "CONTRIBUTOR No. 6140" about reducing odds in the finishing department on dip-dyed Celanese and rayon half-hose, also ingrain, the following suggestions are offered:

There are two general systems in use today for taking care of odds in the finishing room.

1. The elimination of odds by dropping them into the next lower class;
2. Handling the odds by carrying them from one lot to the other.

With reference to the elimination of odds. This merely means that any odds left from the firsts at the pairer are dropped into the irregulars, and when *they* are paired the odds are then dropped into the seconds, and so on down the line. Of course this means that some firsts are put into irregulars, some irregulars into seconds, etc. It does leave only a stocking or two in the last grade to be held until the next lot of the same style comes along. The main objection to this system of course is the fact that the full price is not obtained for the goods because of dropping a few into the lower class.

With reference to the second suggestion, there are several methods of handling these odds at the pairers. The first is to have a series of bins close to the pairers which are broken down into styles and sizes. On dip-dyed work, this will also be broken down into colors, whereas, we are assuming that on ingrain work each color carries a different style. At any rate, there is a small bin, enough to hold one or two dozen of every style, color and size, and every time the pairer gets a lot she takes the box containing odds of that certain color, style and size, and works the odds into the lot. If tickets are kept, accounting for each stocking, then these stockings that are added to the lot can be deducted from the odd ticket and added to the lot ticket. The same can be done for stockings taken from the lot which can be deducted from the lot ticket and added to the odd ticket.

At all times the minimum of odds are on hand, yet no sacrifice is made in the standard of the goods.

The second system under this is to use the bins, as just outlined, but to let the pairer simply add the odds from each lot to this bin until it is almost full; then one of the pairers is delegated to take the accumulation and work this through. In this case the odds are deducted from the lot ticket and added to the odd ticket, and when the odds are worked up a special lot ticket is made at that point.

This system is equally effective on ingrain or dip-dyed work in both half-hose and ladies' hose. In fact, the system has been used by the writer in half-hose, children's and ladies' hose.

If further details are wanted it will be a pleasure to supply them.

CONTRIBUTOR No. 6063.

THE READING

FULL FASHIONED KNITTING MACHINE

TEXTILE MACHINE WORKS • READING PA.

THE KNIT GOODS MARKETS . .

A LET-DOWN in active demand for hosiery, becoming quite pronounced in May, hardly could be ascribed in whole to causes other than those which affected the raw material and goods markets, in lines in which there had been no effort on the part of an industry to establish minimum prices and provide for penalizing violators of an edict banning the selling of merchandise below cost.

Buyers for the trade, dissatisfied with the setting of minimum mill prices for hosiery, may have deferred the placing of the usual spring orders for full-fashioned hosiery in resentment, or possibly as a means of making the price fixing action negligible in its operations. In fact, some buyers, notably for representative retailing establishments, professed to fear that by accepting the $5.75 price as to their stores they would be paying perhaps 50 cents a dozen more than some of their rivals. These buyers expressed a fear also that if they were to place an order at, say, $5.25 a dozen and the field men of the code authority reported sales at that price, there might be some doubt as to deliveries being permissible.

One explanation for dullness in women's silk full-fashioned stockings due to some unusual offerings was that manufacturers were disposing of staples in preparation for the production of so-called ringless numbers exclusively. In fact, such an admission is imputed to the Nolse & Horst Company, Reading, Pa. This sounds plausible when coupled with a statement by manufacturers of the three-thread carrier device that its use seems likely to be as nearly universal as the replacement of obsolescent equipment with approved modern machinery. Retailers are said by one important distributing agency to be striving to close out staples of the 1933 vintage preliminary to stocking up with "ringless" exclusively.

Since happenings in the hosiery trade no longer are viewed as sensational, the appearance of a ringless silk stocking on the market several weeks ago at 59 cents a pair, from a leadding Pennsylvania manufacturer, caused no commotion. It was understood in the trade that this retail price prevailed in only cash-and-carry stores, that others would exploit the number at 69 cents. A mill in Reading, Pa., is distributing among retailers a three-thread 48-gauge ringless that is said to represent one of the best specimens yet to make its appearance.

According to manufacturers close to some persons of influence in the Textile Patents Corporation, controlling certain three-thread carrier inventions, an announcement of extreme importance to mills, jobbers and retailers may be expected very soon, and that with its appearance, a price of one dollar a pair will be representative of the best ringless types yet produced or likely to be produced under present operating cost.

A throwster who is widely known as a supplier of hosiery tram is authority for the statement that 50 per cent of the raw silk purchased by discriminating manufacturers is rejected on the ground of quality, or absence of quality. "What becomes of the other 50 per cent?" the throwster was asked. He replied in effect that it is passed on to other consuming interests, which retain the better grades and reject that which they feel is inferior or, at any rate, that does not measure up to their standards. "I believe," this throwster went on, "that in order to produce hosiery that is free from shadows or stripes it is necessary to use some mechanical device, as, for example, the 3-yarn carrier attachment." This he maintains, "overcomes one of the defects in tram, that is, uneven diameters."

The throwster's comments were in accord with reports of a considerable installation of three-yarn carriers, which, being in their infancy as an innovation, are expected to show even better results than have thus far been obtained. An important claim made for the more nearly perfect three-carrier device is that it reduces the number of irregulars and seconds and, therefore, places the so-called "ringless" stocking in or very close to the popular price bracket.

Notwithstanding the claims made for the product of the three-thread carrier attachment as to elimination of shadows or rings, reasonable cost of the product is to be taken into consideration. For, while some of the better stores have been making gratifying profits through the exploitation of the better types of stockings, the fact remains that the bulk of the retailing is in numbers that sell for less than $1.00 a pair.

That women are, however, taking more kindly to hosiery that is priced slightly more than $1 was indicated in recent sales of the Oscar Nebel two-way stocking through jobbers whose price as to at least a few numbers of this innovation enables the retailer to extract a reasonable profit from sales at $1.15.

The price of women's silk stockings became a matter of national interest from the moment that the National Association of Hosiery Manufacturers, on April 23, designated $5.75 as the minimum at which 42-gauge 4 thread or 7 thread might be sold. It became apparent within a few hours after the action of the meeting was made public that manufacturers would not pull together for maintaining the $5.75 price or any other price that might show a profit for some while perhaps figuring a loss for others.

After a week or two it became common knowledge in the trade among manufacturers, and buyers for distribution as well, that 42-gauge hosiery was being offered for less than the designated minimum price; and it was indicated in unconfirmed but seemingly incontrovertible reports that some buyers were taking advantage of the lower price quoted usually for quantity.

Comments on the $5.75 Price

After a few weeks of rumors and accusations, several manufacturers were approached with the direct question whether they had or had not consummated sales of 42-gauge at $5.25 a dozen. None of the half dozen who were interviewed for the purpose of this article admitted having made any sales at a lower price than $5.75; but it was volunteered by one quite well known mill executive that quantity orders at $5.25 a dozen would show a profit. From this it was inferred that buyers for large chain stores had been seen and that some fairly large orders obtained.

It was stated on acceptable authority that 39-gauge 5-thread had been offered for $3.85 a dozen in the gray. This was given partial confirmation in an authoritative statement that such a stocking had been sold for $4.60 finished. Reports of sales at $5 were quite common. Numbers of manufacturers readily accessible for the purpose of interviews on the price subject seemed not favorable to any action by which those with a legitimately low cost would not be permitted to avail themselves of their more favorable position in competition. Others who may have been forced to quote under the designated price in order to get a share of the business for which so many were striving in the quiet market which appeared to have resulted from dissatisfaction of sellers and buyers with a fixed minimum price.

The situation was complicated from the start by the fact that so many manufacturers, instead of depending solely upon the sale of their own production, buy in the gray and finish in their own plants. There are varying prices for dyeing and finishing; some reported as low as 50 cents to 55 cents, compared with around 75 cents of perhaps a year ago. Thus, it is made to appear that a manufacturer who buys in the gray and can figure a cost of 50 cents to 55 cents for dyeing and finishing, is in a very comfortable position as a competitor. The question remains whether the mills selling the gray accept a price at less than their cost.

It appears from statements from buyers indiscriminately that adverse sentiment is pretty well expressed in a contribution on the price subject by Alan F. Phipps who is perhaps regarded in the trade as one of the shrewdest and better informed buyers for retailing, and who in this connection needs no introduction other than the use of his name, as doubtless every leading manufacturer is fully informed as to his business affiliation. Mr. Phipps' criticism is set forth elsewhere in this issue of COTTON.

The suggestion of some of the more important buyers of hosiery for the retailing trade that manufacturers call into their conferences representative buyers when the matter of price fixing is to be considered, has not been well received among mill men. It is pointed out that price-wrecking in the past usually began among large retailers, and this is admitted by some very important merchandising heads. The buyer reasons that he is closer to the consumer than is the manufacturer and, therefore, has a better understanding of the consumer's notions of value; all of which may be true, say manufacturers, but the latter claim the sole right to establish the prices at which their product may be sold, leaving it to the buyer to form his ideas as to

the prices he can pay. This, as pointed out, promotes competition, in which prices eventually find their level.

Cooperation is fine in theory, it was remarked by a manufacturer commenting on a joint conference with buyers, but, he pointed out, if the manufacturer and the buyer for large establishments are to co-operate, why not the jobber and the retailer do the same thing? This, he suggested, virtually brings us back to an all around conduct of business under some code or a combination of codes, none of which appears to deal with deceptive advertising, which probably has as much to do with unfair merchandising as the tactics of buyers and sellers in their respective fields.

Citing an example, a trade observer called attention to hosiery in a small fly-by-night shop placarded "Guaranteed Full Fashioned". Investigation shows that the guarantee was not overdrawn as to the construction of the stocking, but it was not such a stocking as could be guaranteed as to quality, the consumer being deceived by the claim "Guaranteed Full Fashioned". This stocking was priced at 53 cents, while in a neighborhood store in the shopping section of Philadelphia, havivng a clientele that does not trade on guarantees, a first grade stocking was priced at 59 cents. But for deception, the point was made, women would prefer to pay the six cents additional for the guarantee implied by the reputation of the latter retail establishment.

Retail stores in the more important New York shopping centers are said by manufacturers to have done more damage to the price structure than those in almost any other city. Soon after the $5.75 price was established, leading stores in Gotham were exploiting prices as low as 54 cents, which, it soon became apparent, other retailing establishments were meeting. Thus was spread the demand for a departure from the established minimum for a type of stocking that could be sold for less than the minimum without showing a loss to the manufacturer.

What is believed to have been happening during the greater part of May in the matter of the price evasion edict was forecast by manufacturers immediately following the meeting in which they, themselves, participated in arriving at a given price as representing minimum. That is, they predicted that more hosiery would appear to have been sold by mills during the two days preceding the meeting than in any like period in the history of the full-fashioned industry. It since has appeared that a great many large orders may have been predated, the manufacturers' meeting having decided that the action of April 23 in setting a price was not retroactive.

Many of the manufacturers are by no means discouraged over the cool reception accorded the minimum price proposal. They are pinning hope on the approval of a uniform system of cost finding, by which every producer will be compelled to present an approximately true showing as to cost. But even this started a wave of friendly criticism when the Hosiery Code Authority was reported to have excluded from a proposed form such items as interest on investment, pensions and group insurance, federal and state taxes computed on income entirely, profits and losses on investments other than those in business, research and development expenses, campaigns in connection with promotion sales, executives' salaries in excess of assumed reasonable amounts, maintenance of idle plant and equipment, and unabsorbed overhead, etc.

Failure to include such items, it was pointed out, would afford abundant leeway for setting a price adapted to circumstances. Accepting the opinions of Mr. Phipps as representative of buyer sentiment, it would appear that unless the industry be regulated as to production, etc., a dictator might be required. It is a question whether the selection would be more acceptable to the trade if it were made by these directly interested as manufacturers, than through some Government agency.

Charges for dyeing and finishing probably will be made more uniform and more profitable after the textile processing code authority has ascertained about what it wants. It has been no secret in the trade that dyers have been as far apart in their charges for service as are hosiery manufacturers in the prices for their product. Effort was made several years ago to line up the Philadelphia dyers and finishers in an organization pledged to co-operate in price maintenance, but the effort never resulted in any achievement indicating improvement.

"Southern manufacturers of men's half-hose have, in the past few years, made amazing progress in the matter of styling," it is stated by the men's hosiery buyer for one of the more widely known department stores operating in Philadelphia and in New York. "Of course," it was pointed out by the buyer, "the manufacturer of half-hose for men is almost exclusively a southern industry, and competition among the mills of that section is very keen. This has resulted in a wonderful improvement in standards of quality, and I have noticed," the buyer continued, "that the dyeing and finishing are of a much higher order than a few years ago."

It is essential for the success of the seamless half-hose industry, this buyer suggested, that there be no relaxation of effort for carrying the line to a still more important place in the seamless field, "for there is an increasing demand, at least with us here in this store, for full-fashioned silk socks with conservative clocking or other ornamentation."

The buyer stated that they are having unexpected success with a line of full-fashioned silk socks selling for 85 cents a pair, or three pairs for $2.40. He thought that with full-fashioned going forward, it would be logical to expect even greater efforts than in the past to put seamless on a higher plane. The full-fashioned line of which he boasts is of 14-thread silk. A line of seamless of 12-thread silk is in good repute in the trade, retailing for around 50 cents a pair, depending on the conscience of the retailer.

There is reported increasing interest in half-hose of rayon and lisle in combination, as compared with a year ago, while silk and cotton, as a combination, is in somewhat less demand. This is true also of this combination in women's full-fashioned hosiery.

The Half-hose and Infants' Markets

The market for half-hose would appear over-supplied, judging from complaints of disparity in prices.

The allegation that some very attractive lines of half-hose have been selling for less than cost has served to direct attention to bids submitted recently for supplying worsted socks for the U. S. Government. It was pointed out that invariably when bids for supplies are asked by the Government, spinners figure yarn prices for customers who are intending bidders, on the lowest possible scale. The manufacturer, having advantageous quotations on yarns, also figures on getting the order, even at a loss, rather than aiming at a profit. He takes the stand, of course, that a Government contract means steady plant operation for a reasonably long period and that, while his Government order may show no profit, its acceptance at perhaps a loss reduces his overhead to an extent that enables him to derive a better than ordinary profit on his civilian goods.

The suggestion was made in both the cotton and the worsted yarn trades recently that if manufacturers selling their hosiery in civilian trade are to be penalized for accepting prices that show a loss, why not require that bidders on Government contracts keep their prices at a level where they also will escape a loss. One retort to this, when the question was submitted to persons close to Government buying agencies, was that "this business is distinctively between the Government and an individual, and does not concern the public in the sense that it is affected by continued losses in industry."

Previous reports of a large volume of spring business having been placed in children's hose and infants' socks appear to have virtual confirmation in trustworthy complaints of price cutting and sales at near or below cost. It is related by a well known sales representative for the range of hosiery that jobbers are responsible for a campaign of price competition in infants' socks. A few jobbers, it was stated by this authority, found they had overbought, although shipments to their retail trade were eminently satisfactory. There seems a feeling of uncertainty as to whether in view of an apparent drift to bare legs for children and some uncertainty as to the near future for silk, rayon and cotton yarn values, there would be the usual duplicate business in this class of hosiery. This feeling seemed to be emphasized when later along in May rather large quantities of anklets for infants were offered at $1.25 a dozen, which was under the price for the current season. A seller's explanation was that the offering comprised 1933 numbers in which the tops were of a somewhat passe pattern.

Rayon figures conspicuously in the reports of approximately 400 hosiery mills to the Department of Commerce for March. Outstanding in the hosiery items showing increases in use of rayon is the classification "Boys', Misses' and Children's" of which the March production is reported at 134,074 dozen pairs, as compared with 96,857 for the corresponding month of 1933. There was an increase also in straight rayon in women's full-fashioned hosiery, the production of which is given as 32,563 for March this year, against 29,704 for the like month of last year.

Women's seamless consumed considerably more straight

rayon, but the large per cent of increases is shown in men's seamless half-hose and boys', misses', and children's, in which cotton and rayon were used in mixture. It seems significant that notwithstanding the very low price of silk, it suffered a very substantial decline from March a year ago in hosiery as a class and in women's full-fashioned specifically.

Seamless cotton hosiery for women suffered a setback in reported production but scored a comfortable gain in net shipments. The perhaps better feature of the tabulated reports for March is the showing of an increase in unfilled orders to 6,031,676 dozens from 3,131,923 a year ago and an increase of only around 300,000 dozens in stocks in mills.

There is little of significance in comparisons of March and the preceding month, with the exception that in March cancellations rose to 200,775 dozen from 71,707 dozen in February. Cancellations of women's full-fashioned alone increased from 28,233 dozen in February to 106,699 dozen in March.

Shippers of women's cotton underwear in the primary markets reported a slowing down in orders for light weights, in May, and an unwillingness on the part of numbers of distributors to take in their women's heavy weights prior to July 1, the date of the summer inventory. In fact, it is related by some of the more active manufacturers of women's cottons that orders for light weights are being so scaled that stocks will be at a minimum for the inventorying.

An order for less than a case lot intended for a Friday promotion sale by a large department store was given to the selling agency on Monday. On Wednesday the store wanted to know if the goods had been shipped. As the underwear had to be made specially for the sale, shipment had not been made, but the mill, distant from delivery destination by more than 90 miles, managed to have the underwear reach the store late Thursday night by motor truck. It was a close shave all round, for had the goods not arrived by early Friday morning the order would have been cancelled and the mill might have lost a customer. The incident disclosed that the mill in question is carrying as little stock relatively as the big retailer that buys on Monday for a special sale Friday.

The Situation in Underwear

Deliveries of light weight cotton underwear have gone forward in better volume than in the spring of 1933, in the experience of some of the more representative metropolitan jobbers. Men's lines were bought more freely and retailers as a class were favorable to prompt shipments. There was heard some complaint from that source around the middle of May when report was current that weakness in the primary markets had developed, with the result that prices for shirts and shorts were easing, quotations in instances being lower by around eight per cent on numbers formerly selling for $1.60 and 15 per cent on $2.10 numbers.

The sagging in wholesale markets could be attributed to overproduction after the trade had contracted liberally, sellers estimating too high on potential duplicate business. Both primary and secondary markets, it seemed, had overestimated buying power in certain communities, notably where there were more persons on the welfare lists than was estimated in view of reports of decreasing unemployment. It was pointed out, too, that an unusual number of strikes involving, in instances, large numbers of persons, probably accounted for forced economy in urban sections.

A jobber commenting on the jam in the underwear primary market said his house, selling in wide Middle States territory, noted a somewhat phenomenal increase in the underwear business among retailers in the smaller inland towns. Measuring the retail business by Saturday volume, the jobber stated some of the customers of his company reported a 50 per cent increase in sales in the first two weeks in May over the last two in April. This ratio seems not to have been felt in northern industrial communities, where, however, there is reported a fair repeat order business, but not of sufficient magnitude to absorb the excess production of a few manufacturers.

Following the early May decline in raw cotton, men's heavy weight cotton underwear appeared to some of the New York operators to be forcing the market. Some few of the more important mills were reported about that time to have restored their lines to sale after having booked a liberal amount of initial business. Reports fly thick and fast in the knitted underwear markets, and it usually is not long before reverberations are heard over wide areas. More time was required to halt the reports of a reopening of their lines by several mills than it took to start them on their way.

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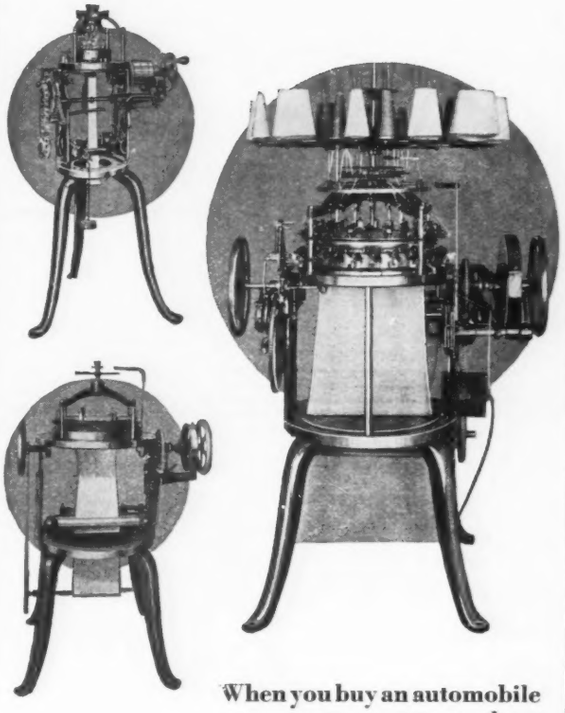

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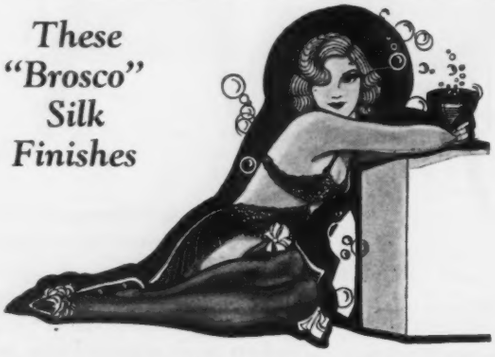

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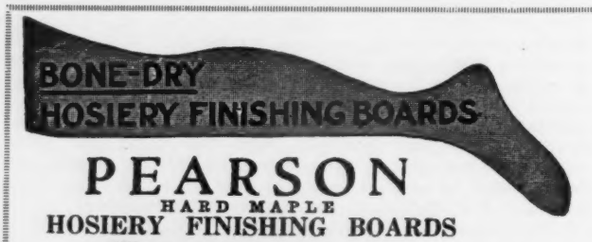

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COTTON

ATLANTA, GEORGIA

Interest in men's heavy weights eased considerably with the sagging in the basic raw material markets. This was the more readily detected among the smaller mills, where the withholding of shipping details has a broader meaning than in the ranks of the minority but more powerful element of the producers. As some of the mills in the smaller class had not withdrawn their lines after selling up for a few months, their product was available in May in the absence of the formality of a reopening.

That the underwear industry is better organized than a few years ago seems indicated in the apparent steadiness of prices in a sort of pre-summer dullness. Mills are commencing to feel the need of another flow of orders but there is no sign of pressure being exerted on buyers for jobber distribution.

Reports of a Japanese invasion of the United States markets for cotton underwear necessarily were utilized by an element among buyers for broadening the effect of a slipping in cotton and rumors of a reopening of some of the winter lines. Talk of reciprocal tariff legislation by which the prerogatives of a tariff commission would be vested in the President seemed to give color to a proposal that Japan was not likely to be overlooked in the event the solution of tariff problems be left with the President in the program for establishing foreign trade relations on a new basis.

Contracts were awarded by the War Department for summer underwear for the Civilian Conservation Corps, as follows:

Shorts—Topkis Bros. Co., 54,000 prs. @ .2648, less one-half of 1 per cent, 10 days; Reliance Mfg. Co., 80,034 @ .2445, 30,000 @ .25, and 56,250 @ .2535 net; Campe Corp., 9,596 @ .2695 net; Batavia Mills, 49,120 @ .2623 and 58,870 @ .2623 net; Nantex Mfg. Co., 150,000 @ .25875, less one-tenth of 1 per cent, 10 days; Morris Trichon Co., 75,000 @ .256176, less 1 per cent, 10 days.

Undershirts—J. P. Stevens & Co., 62,500 @ .185 net; Koenigsberg Bros., 86,250 @ .1954, less one-tenth of 1 per cent, 10 days; Norwich Knitting Co., 67,500 @ .176 and 37,500 @ .1767, less 2 per cent, 10 days; Brown Knitting Co., 121,250 @ .1837 net.

Bids for supplying the shorts ran as high as 34 cents a pair, while for supplying the undershirts one bidder named a price of .2275 cents.

Manufacturers of bathing suits probably will not complete their production season until near the end of June, and some mills will be filling orders a week or two later, while confronted with a probability of some orders being returned. The Philadelphia mills lost an estimated 25 per cent of their 1934 production by reason of a strike, and in May were operating on overtime schedules on a suspension of a code regulation by special dispensation.

According to one high authority on bathing suits, less lastex was used in their construction this year than in 1933. The "miracle yarn", a term given to lastex, proved satisfactory last year to a few manufacturers, but not so to those who had used lastex and worsted yarn in proportions unfair to the former yarn, suits skimped as to the lastex content, proving unsatisfactory and coming dangerously close to its disparagement as a commodity that has grown fast in favor in many lines.

One of the larger users declares it ideal for swim suits, and another, holding the same opinion, omitted it in all but a few numbers this year in order to hold price down to the popular notion of what a swim suit ought to cost the wearer who can disport in it with much satisfaction as an absolutely form fitting garment.

It has been made known that those in control of the distribution of lastex are discriminating very closely in the licensing of manufacturers to use it, this as an outcome of some of the 1933 experiences with a few manufacturers who made the mistake of undertaking to cheapen by an improper use of the miracle yarn.

Distributors' demand this year for bathing suits was for price garments and they accepted some of what proved to be fabric of a mixture of worsted and cotton yarns or adulterated woolen yarns masquerading as worsted. As the production season wore on, demand shifted to pure worsted, partly in response to the lower cost of worsted yarns. It is noteworthy that a very large per cent of the season's swim suits are the product of a few mills maintaining former high standards.

Sweaters have had a sort of groggy season, popular price numbers having had a fair sale for spring distribution, however. Lines generally were opened late in May for fall, and, it was felt, with fair prospect of a reasonable volume of business, on a prospective rising wool market. A Philadelphia manufacturer reports wide acceptance of a line of all cotton sweaters for summer wear, and promise of a repetition of that success for fall and winter. The cotton back worsted garment continues a popular low price offering.

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REVIEW OF THE YARN MARKET

Philadelphia, May 19, 1934.

ALLEGATIONS of excessive production of combed peeler yarns were discussed in the Philadelphia trade following the meeting of the Gastonia section combed spinners in Gastonia, N. C., on May 11. From reports received in the Philadelphia yarn trade it appeared there was considerable antagonism to a proposal to reduce work schedules by 50 per cent, to a 20-hour shift per week. This proposal, with others relating to means for protection against low price silk and inroads on cotton by rayon were left with a committee of three with full power to act after conferring with other sectional groups of combed spinners, in the South and in New England.

Among those represented as the more outspoken in opposition to a 20-hour week are some of the larger spinners, some of whom insist such a reduction in work time would necessitate advances in prices which would meet with stout resistance from manufacturers. Not only would the shorter week mean an increase in overhead—there would be felt a need for an increase in wages to compensate for the fewer hours for earning—it was pointed out.

An underwear manufacturer selling in the New York and Philadelphia markets maintains that underwear prices already are too high for popular consumer approval, and that any increase would have the effect of retarding sales to retailers. "It is surprising what a difference in sales is experienced as between 35 and 59 cents per garment," says this manufacturer, quoting buyers for the trade. Underwear pieces priced 35 cents, they point out, may be sold three for one dollar, effecting a material increase in volume. Thus the manufacturer's view is injected into the picture of a suggested result from an increase in yarn cost, unless buying power also is increased.

Underwear manufacturers were taking in yarns very cautiously in May. In fact, the market for all knitting yarns seemed becalmed last month, in large measure a continuation of a quiet situation toward the latter part of April. Sale prices for frame spun single carded, 10s on cones struck an indicated low of 26 cents during the depth of a fortnight's sharpest cut in average grade yarns, super or slow carded being quoted usually two cents higher than what spinners of this type refer to as ordinary. Average quotations on good yarns not of super carded grade were around 26½ to 27 cents. There was little demand, and sellers were not pushing for orders at concessions. One house declined 33½ cents for single carded 26s of good average quality.

Buyers were in the market in search of soft spots, ready to buy on a substantial shading, but not actually eager for yarns at the market. The better numbers in knitting yarns, as reported by one leading house were 16s and 20s 3-ply, hard twist, and 12s, 16s, and 20s, 2-ply, soft twist, for women's skirts and sports outerwear generally. Suppliers of hosiery yarns experienced a decided lull during a full four weeks commencing in April. It seemed an opinion of executives and salesmen contacting knitters and weavers that the resistance to prices and in sequence slow trading might be looked for until after the middle of June, perhaps extending into July.

Apparently, the goods markets, from fine fabric to carpets and rugs, were causing manufacturers some concern and influencing the buying of supplies on a hand-to-mouth basis until, in any event, after the July 1 inventorying. At times interest in carded yarns see-sawed from weaving to knitting numbers, and as the month advanced, one spinner after another was reported by Philadelphia representatives as taking a week's holiday or reducing output to two-days plant operation per week.

While there has been a considerable softening of the markets for combed yarns, notably singles, there is a disparity in price that indicates a disposition of some sellers to maintain determined resistance to low offers. A day or two after the Gastonia meeting of May 11 a southern spinner of combed announced an increase of two cents a pound in the price of some of the more popular counts used in the knitting trades. This advance was announced by a spinner who confessed to a need for business.

Quotations of 34 and 35 cents for 24s combed singles were heard, and for 38s there were sales at 42 cents, with at least one spinner of admittedly high quality yarn quoting two cents more.

In the mercerized group, where prices had been slipping slowly for several weeks, some new lows for the present year were recorded with 60s/2 quoted 70 to 72 cents and 50s six cents lower. The remainder of the list followed the usual differential.

Worsted Yarns

A full six months has elapsed since worsted yarns for the weaving and knitting trades began their descent. While there is a broader outlet for knitting yarns, their decline in price has exceeded that for weaving numbers. Some counts of knitting yarn have declined by as many cents per pound as the wool in the grade from which they are spun. This is true especially of 2/20s, quarter blood grade, quoted $1.12½ and sold as low as $1.10 recently, a drop from $1.30, the peak. Prices for worsted yarns are, in reality, an unknown quantity, spinners carrying large stocks left on their hands by reason of owners of contract yarns withholding shipping details, accepting offers that represent quotations on new business. The bathing suit production season is at an end for 1934 and production of fall sweaters has hardly commenced, while in men's wear, weavers are loath to go ahead with heavy weights so long as New York distributors are unwilling to pay yarn parity prices.

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Paper Makers Chemical Corp., Atlanta, Ga.; Marrero, La.

The American Business Paper

ONE of the vital reasons for the tremendous commercial development in the United States is the American business press. The American business man, manufacturer, wholesaler or retailer, is presented each month with a veritable encyclopedia of information in his chosen field. To the schools of America, and the daily press, as instruments of democratic education must be added our business press with its specialized service.

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LYKOPON

THE name **LYKOPON** has always stood for concentrated ***sodium hydrosulfite*** of exceptional quality. Long experience in manufacture and careful laboratory control combine to insure uniformity, purity, strength and stability.

RÖHM & HAAS CO., INC.
222 West Washington Square
Philadelphia, Pa.

BOSSON & LANE, INC.

Manufacturing Chemists
Established Jan. 1, 1895

Works and Office, Atlantic, Mass.

High Grade Castor Oil Products

Sulphonated-Saponified

Soluble Oil **Para Soap Oil**
Turkey Red Oil **Castor Soap Oil**
Soluble Pine Oil **B & L Bleaching Oil**

PENTRALYN,

a superior assistant for Beam, Spool, Bobbin and Package Dyeing.

Bleach Softener CSO, Finishing Sizings and Softeners

VICTROLYN,

the economical assistant in warp sizing. Penetrating, Lubricating and wholly efficient.

B & L Bleachers' Bluings and Violet Tints

GOOD MONEY VALUES
-FREEDOM FROM WORRY

For better sizing of Rayon Warps

HERE is the most effective method of securing improved fibre lubrication, greater pliability and increased resistance to moisture. HARTOGEL "K" gives RESULTS, especially when applied in proper proportions with our special Rayon Oils. HARTOGEL "K" is one of the HART products, long famous for their higher quality and unfailing uniformity.

Full data on any or all HART products sent gladly on request.

THE HART PRODUCTS CORPORATION
1440 BROADWAY, NEW YORK, N. Y.

Other HART Products:

Sulfonated Oils
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Rayon Oils
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Dye Assistants
Softeners
Rayon Sizings
Warp Dressings
Anti-Mildew Agents
Wetting-out Agents

Hartogel K

BASED ON RESEARCH

for LOW COST BLEACHING *of any fabric*

BECCO

CONCENTRATED HYDROGEN PEROXIDE

Hundreds of mills throughout the United States have made this up-to-date discovery: that *Becco* Concentrated Hydrogen Peroxide is a short-cut to superior bleached goods at lowest unit cost . . . *Becco* Technical Service is prepared to show your plant the way . . . Write for full details.

BUFFALO ELECTRO-CHEMICAL CO.
BUFFALO, NEW YORK
Boston New York Philadelphia Chicago Charlotte
Toronto Montreal

Those who produce sheer hosiery prefer
HYDROXY
Boil-Off Oils

of the hydroxol type because they do not contain silicate. Hydroxy Boil Off Oils give your hosiery that "quality finish" so much desired. They are not severe in their action during the boiling process.

For boiling off hosiery made of Chardonet yarn we recommend the use of our Rayon Scour, A. and B. They are also preferred for boiling off underwear made of Chardonet (Tubize).

You will also find these Kali products of great value just now:

HYDROXY SLASHING COMPOUND "S", ideal for sizing Viscose yarns.

HYDROXY FRENCH SIZE for sizing acetate warps. HYDROXCENE is a popular treatment for Rayon. It makes the yarn twist better and set more uniformly. Hydroxcene, being soluble, is easily removed, and allows the material, when dyed, to crepe nicely and present the desired pebble on the fabric.

SULFOKO is a popular rayon throwing oil used in conjunction with gelatine for treating rayon crepe twists.

The KALI Mfg. Co.
Manufacturing Chemists
1410 N. Front Street, Phila., Pa.

Experience--

Over a half century of manufacturing products for the textile trade has given us a broad experience in what is best for dyeing, bleaching, and finishing. Our line of products is unlimited, while the location of our three plants insures prompt delivery to any section of the country.

QUAKER CHLORAL

Sulphonated Olive, Castor, Neatsfoot Oil and Specialty products. Practical demonstrations with no obligation.

QUAKER CITY CHEMICAL COMPANY
PHILADELPHIA, PA.
KNOXVILLE, TENN. HAMILTON, ONT., CAN.

Inseparably linked!

LABORATORY CONTROL — UNIFORMITY

ONYX

GUARANTEED UNIFORMITY

is as valuable in your mill as modern equipment

When you put ONYX compounds into your mill . . . guesswork and "chance" go out. You know in advance the results you will get in throwing, bleaching, scouring, dyeing, printing and finishing. Your control over these processes is made more accurate.

Textile manufacturers are invited to write for samples, stating operation and fabric. The services of our textile chemists and modern laboratories are at your disposal, without obligation.

ONYX OIL & CHEMICAL CO.
Specialists on Finishing Materials.
Jersey City, N. J.
Midw. Repr. MAHER COLOR & CHEMICAL CO., Inc., Chicago.
In Canada: ONYX OIL & CHEMICAL CO, LTD., Montreal.

SPRAY YOUR COTTON WITH

MINEROL

BY THE

BRETON MINEROL PROCESS PATENTED

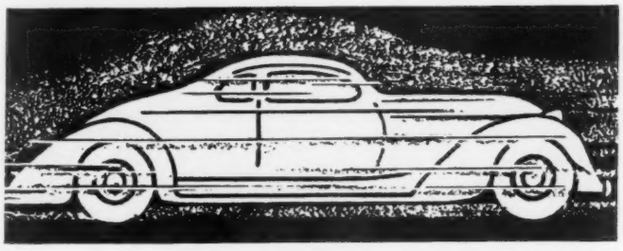
A system of conditioning cotton and other textile fibres by applying MINEROL as a lubricant additional to that which is natural to the fibre.

Why is it so many mills have adopted the BRETON MINEROL PROCESS?

BORNE SCRYMSER COMPANY

Originators of the BRETON MINEROL PROCESS for CONDITIONING COTTON

17 BATTERY PLACE · NEW YORK



Use STREAMLINED PROPELLAIR FANS

for improved EXHAUSTING from SLASHERS, SINGERS, NAPPERS and DYE HOUSES

Like modern motor cars, Propellair Fans with their streamlined motor strut supports and Curved Entrance ring, increases air flow.

Write Today For Illustrated Data

PROPELLAIR INC. TRADE-MARK REG.

SPRINGFIELD, OHIO

STARCHES

Why

TEXTILE MANUFACTURERS CONTINUE TO USE . . .

THIN BOILING STARCHES

Eagle One Star
Foxhead Eagle Two Star
Eagle Three Star
Eagle Four Star

THICK BOILING STARCHES

Globe Pearl Buffalo
C. P. Special Famous N.
Hawkeye Peerless

DEXTRINS

White Dark Canary
Canary British Gum

WARP sizing as well as printing, dyeing and finishing processes offer many problems in the use of starches, dextrins and gums. The selection of the proper products is of great importance. Listed above are products available for the purposes and conditions of exacting textile manufacturers.

These starches, dextrins and gums are manufactured by carefully controlled and standardized methods. Purity and uniformity are guaranteed. Economy and efficiency are attested by the constantly increasing number of users who are getting satisfactory results.

IMPORTANT

Our research department will be glad to furnish additional information regarding the types and uses of these and other products as applied to the special needs of the Textile Industry. Write to—

CORN PRODUCTS REFINING CO.

17 Battery Place NRA MEMBER U.S. WE DO OUR PART New York City

DEXTRINS AND GUMS

ATLANTA HARNESS REEDS

A word about harness and reeds

Nobody can tell you truthfully that there are better products than those made by the Atlanta Harness & Reed Manufacturing Company.

REEDS
Cotton-Duck
All Metal
Slasher-Combs - Striking

HARNESS
Cotton Mail Eye
Selvages
Special Twist Cable

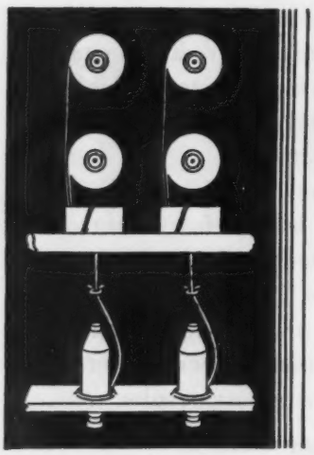
HEDDLES ● FRAMES ● PARTS

New Design Positive Clamp Hooks

When in Need of Service, Write Us

Satisfactory Service Since 1919

ATLANTA HARNESS & REED MANUFACTURING CO.
P. O. Box 1375 ATLANTA, GEORGIA Main 0517-8



DONT LOSE *money* Twisting *from* Spools *Use the*

ABBOTT SYSTEM

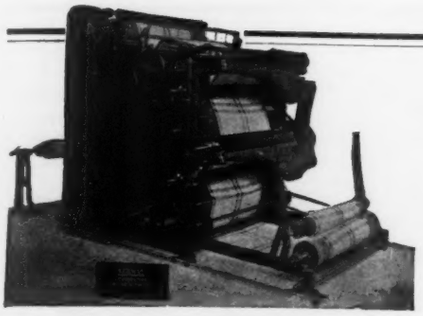
write and see why

to ABBOTT MACHINE CO.
WILTON, N.H.

Cotton Card Grinders.
Woolen and Worsted Card Grinders.
Napper Roll Grinders.
Calender Roll Grinders.
Shear Grinders.

All makes of grinders promptly and thoroughly repaired.

B. S. ROY & SON COMPANY
Established 1868
Worcester, Mass., U. S. A.



THIS BRUSH AND SHEARS
does EVERYTHING mechanically but START itself

SOMEONE has to throw the switch to start the Hermas Automatic Brush & Shears. But that's all. Then the machine runs automatically and the operator can forget it until the roll is finished.

IN some mills the operators are released to perform other duties. In others they run a whole group of these machines, keeping them in constant operation. In still others they are mounted in train with other equipment such as calenders, sewing machines, etc., run by the one operator, thus eliminating unnecessary handling of the goods.

NO matter what system is employed, the operation is always mechanical. Hermas Shears open automatically to permit the passage of all seams. These are the only machines that shear to within one foot of seams. No hand trimming of 7 or 8 yards of goods before seams are necessary when you use Hermas's.

Used For All Types of Fabric

THE superiority of these machines is evidenced by their widespread use in all types of mills from those manufacturing the heaviest sail duck to the lightest fabrics. More than three times as many Hermas Machines are in operation in American mills as all others combined.

THE brushes are adjustable so the cloth may be given light or heavy brushing.

USERS are paying for these machines out of savings in a few weeks or months. We will be glad to give you actual figures and estimates showing exactly how much money they will save in your plant. No obligation.

HERMAS

HERMAS MACHINE CO.

Warburton Ave., Susquehanna R. R., Hawthorne, N. J.
Southern Representatives: Carolina Specialty Co., Charlotte, N. C.

"WE PREFER TO CHANGE OUR RINGS IN SUMMER"

"Every summer we change some rings, and this summer we're going to make sure that the rings on ALL our frames are ready for a right busy Fall. I'd much rather start new rings in summer when things are a little quiet. The Boss isn't riding me for production then. By using DIAMOND FINISH RINGS I can start in without traveler worries, thanks to their slick polish."

WHITINSVILLE (MASS.) SPINNING RING CO.

DIAMOND FINISH

Makers of Spinning and Twister Rings since 1873

UNIVERSAL
STANDARD RING TRAVELERS
BEST MEET THE SPECIFIC REQUIREMENTS FOR SPINNING AND TWISTING

THE BOWEN PATENTED BEVEL EDGE TRAVELER
VERTICAL OFFSET TRAVELER
FOR
EVEN SPINNING AND TWISTING
VERTICAL NE-BOW TRAVELER
FOR
SILK, RAYON AND FINE WORSTED YARNS. A TRAVELER THAT WILL NOT UNTHREAD. ESPECIALLY DESIGNED FOR LUBRICATING RINGS.

Write For Samples And Particulars.

U. S. RING TRAVELER COMPANY
PROVIDENCE, R. I. GREENVILLE, S. C.
AMOS M. BOWEN
Pres. and Treas.
Southern Sales Representatives
Wm. P. Vaughan, Greenville, S. C.
Oliver B. Land, Athens, Georgia
Torrence L. Maynard, Belmont, N. C.
"A TRAVELER FOR EVERY FIBRE"

I WISH WE COULD GET STEEL HEDDLES AS GOOD AS CHAFELESS CORD COTTON HARNESS!
WELL YOU CAN, MAN, DIDN'T YOU KNOW THOSE EMMONS PEOPLE MADE A CHAFELESS STEEL HEDDLE TOO?
SURE THEY DO! NOT ONLY A CHAFELESS STEEL, BUT A LONGER LIFE MAIL EYE HARNESS, ADAPTED FOR THE DRAWING-IN MACHINE!

THERE'S A LOT OF SATISFACTION IN BEING ABLE TO GET STEEL HEDDLES, COTTON HARNESS AND MAIL-EYE HARNESS ALL FROM ONE SOURCE... EMMONS MAKES ALL THREE... YOU CAN GET JUST ABOUT EVERYTHING YOU NEED IN WEAVING EQUIPMENT FOR THE LOOM FROM EMMONS....

EMMONS Loom Harness Co.
ESTABLISHED 1867
LAWRENCE, MASSACHUSETTS...

AN UP-TO-DATE PRINTING PLANT

equipped with modern machinery and a staff of competent workmen, solicits, thru this publication, a trial order on your printing needs.

We have built a reputation that is known over the entire South by our special attention to the minutest detail.

We are more than ready to answer any question that relates to your printing problems.

Write us and let us quote you on anything from a postal card to a full bound book.

The A. J. Showalter Co.
PRINTERS AND PUBLISHERS
DALTON GEORGIA

There is Nothing like

REG. U. S. PAT. OFF.
CALF
for Roller Covering
R. NEUMANN & CO.
Hoboken, N. J.

"Cotton Mill Machinery Calculations"

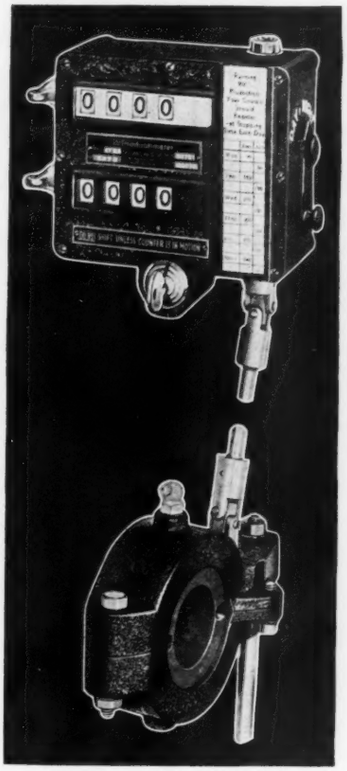
EVERY Textile Man should have these reference books. They cover in a detailed and thorough manner all calculations necessary to be made on any cotton mill machinery manufactured in the United States and constitute one of the best references on the subject obtainable.

These two volumes are illustrated with 45 diagrams and contain 21 reference tables.

As the value of a book lies in its contents and not in a fancy cover, we have put these two volumes out in a strong, serviceable binding. You can secure them in conjunction with a three-year subscription to COTTON.

Write for circulars and full information.

COTTON
Grant Bldg., Atlanta, Ga.



Productimeter Pick Counters:

Are a balanced product emphasizing no one feature but engineered throughout to give the greatest utility. Each part is made of the material that will give the best service for its function. Some of the things designed to promote ease of installation and accuracy of count are:

A split worm and housing clamps to the loom shaft without drilling or removing any part of the loom.

A cover sealed on the case so it can be removed only in the tool room prevents tampering with the dials.

The upper universal joint is fastened directly to the case instead of to the supporting bracket as an additional insurance of a reliable count.

The reading for each shift is positively locked against creeping when the other shift is running, or when the counter is in neutral.

Productimeter Loom Pick Counters are available in single or double shift and reset or non-reset types.

DURANT MFG. CO.
1922 N. Buffum St. Milwaukee, Wis.

New England Branch
Leo A. Nourie, *Manager*
181 Eddy St., Providence, R.I.

Productimeters
THE SPEEDOMETERS OF INDUSTRY

Eleventh Southern Textile Exposition Textile Hall, Greenville, South Carolina October 15 to 20, 1934

It will be held in Greenville, South Carolina, in Textile Hall, and is endorsed by the Southern Textile Association. It is the only all-textile show operating on a fixed biennial schedule.

All executives, their associates, superintendents, master mechanics, department heads, and operatives in cotton wool, worsted, silk, and rayon mills and in dyeing, bleaching and finishing plants are invited to attend. There will be interesting conventions and group meetings. Special railroad rates will be announced.

Modern machinery, installations, accessories, and supplies are required for quantity and quality production. Successful mills need labor-saving and cost-reducing equipment.

Our show affords the quickest and most satisfactory means of introducing new machinery and equipment, and of keeping well established products in the minds of buyers. The exhibitor renews old acquaintances and acquires new customers by showing his goods and explaining their merits. Many of the leading companies which sell to the textile industry have taken space.

We shall be pleased to give full details of the show upon request. The dates are

OCTOBER 15 to 20, INCLUSIVE

Address

TEXTILE HALL, GREENVILLE, S. C.

LOOM REEDS

Quality – Not Quantity Is Our Aim

The Harris method of manufacturing reeds, is the result of many years of experience in making reeds to fit the high requirements of mills, who are most exacting in their choice of equipment.
It is not our purpose to produce reeds in the greatest possible quantity—*it is our purpose to maintain the highest possible quality*, through an organization thoroughly trained to at all times consider the purchaser's interests first.
Repeat orders from a constantly growing number of representative southern mills, indicate the satisfaction that comes only from manufacturing to an ideal of quality.

HARRIS MANUFACTURING CO.
207 WALKER ST. ATLANTA, GA.

HURLEY-JOHNSON CORP.
25 WALKER ST., NEW YORK
SOLE AMERICAN AGENTS FOR
JAMES KENYON & SON, LTD.
BURY, LANCASHIRE, ENGLAND
Celebrated
LAPPINGS and BLANKETS for PRINTING MACHINES
CLEARER, ROLLER and SLASHER CLOTHS.
For Best results in Sanforizing use
KENYON'S ENDLESS WOOLEN BLANKETS

Fully 25% of All Cotton Textile Spindles in the United States are Operated on the Loper System.

Ralph E. Loper Co.
INDUSTRIAL ENGINEERS
Specialists in Textile Costs Over 21 Years
FALL RIVER, MASS. GREENVILLE, S. C.

Arguto NON-METALLIC
20 years without a drink—
"First bought 'Arguto' bearings 25 years ago . . . still buy them because they're alright."
—unsolicited testimonial
ARGUTO OILLESS BEARING CO.
Wayne Junction, Philadelphia, Pa.

THE AUDIT BUREAU OF CIRCULATIONS

And Advertising Terms

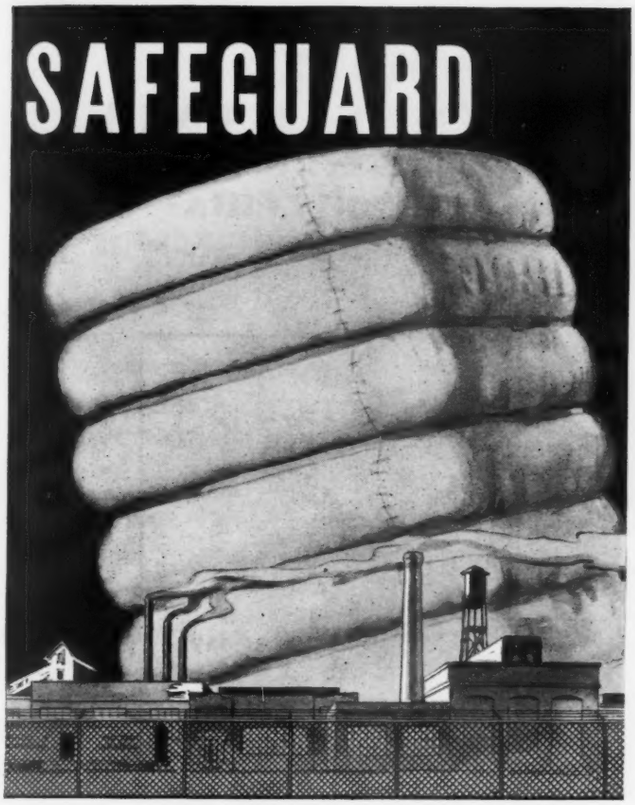
The Audit Bureau of Circulations is the cutting edge of the "Truth in Circulation" movement.

Today, nearly fifteen hundred publications of every type, published in the United States and Canada, make detailed semi - annual statements through the A. B. C. as to the size of their circulations, where they distribute their copies and how they build up and maintain their subscription lists. Every year, the traveling auditors of the Bureau visit these publications and examine and report on the accuracy of their circulation claims.

One of the most important contributions, if not the most important, which the A. B. C. has made to the intelligent sale and purchase of advertising space is the establishment of a uniform language for buyer and seller to use. Before the A. B. C. was founded, few advertising terms were used and understood in the same way by everybody. "Net paid circulation," for instance, meant ten or eleven different things. The A. B. C. has given definite meanings to words and terms. When an advertiser is comparing a number of different publications, he knows that the same word used in the report of one publication means exactly the same thing in the reports of the others.

Fair trading without standardized terms is an obvious impossibility. Because the Audit Bureau of Circulations has given advertising terms unequivocal definitions, advertisers are today able to transact business with publications, free from the dangers of misunderstanding and of being misunderstood.

Cotton
Grant Bldg. Atlanta, Ga.



with Cyclone Fence

Cotton again is king—factory wheels are turning —people are working—money is circulating.

A new prosperity is everywhere apparent—and equally apparent is the social unrest in industrial centers and the need for protecting the plants and warehouses.

Such protection is best afforded by the installation of dependable Cyclone Fence. Efficiently—economically—Cyclone protection eliminates costly theft, destructive fires, and other forms of vandalism.

Of superior design—it is constructed of heavily galvanized rust resistant copper-steel—and its erection is quickly, easily accomplished by factory trained crews. The facts will prove interesting. Send for them today. Address Dept. C.

CYCLONE FENCE COMPANY

General Offices: Waukegan, Ill.

Branches in Principal Cities

SUBSIDIARY OF UNITED STATES STEEL CORPORATION

Pacific Coast Division
Standard Fence Company
General Offices: Oakland, California

Cyclone—not a "type" of fence—but fence made exclusively by Cyclone Fence Company and identified by this trademark.

Cyclone Fence
REG. U.S. PAT. OFF.

MODERNIZE YOUR MILL CLEANING METHODS

Mopping mill floors by hand is like trying to turn out your production quota with old-fashioned weaving and spinning equipment. It simply will not do the job.

Even if hand mopping could get the floor clean (which it cannot) it is too slow. Before the mopping crew can get half through, the area they have done will be dirty again . . . marked by foot prints, tracked up with truck wheels.

This *Finnell* Combination will do the work of twenty hand moppers . . . without any sloppiness, unevenness . . . and does it so fast that you can do a room at a time. It's a double-duty machine. First it scrubs . . . then the vacuum action immediately picks up the water with all the dirt and oil and deposits it in a tank. Leaves the floor clean and dry.

Demonstration Free. We are prepared to give you a FREE demonstration in your mill. Write or wire *FINNELL SYSTEM, INC.*, 1306 East Street, Elkhart, Indiana. Canadian Distributors: Dustbane Products, Ltd., 207 Sparks Street, Ottawa, Ontario.

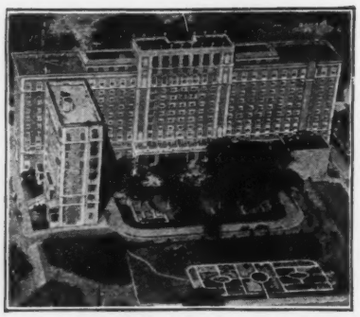
THIS 2 IN 1

machine is only one of 8 different models, many of which come in different sizes. The *Finnell* line is large enough to give you exactly what you want . . . one machine that will do several jobs . . . a whole battery of machines, each with a specific job.

FINNELL

EST. 1906

ELECTRIC FLOOR SCRUBBER—POLISHER



OLD TIMERS AND NEW COMERS

Find perfect relaxation at the Atlanta Biltmore

Yes sir, the kind of relaxation that takes the edge off your hardest business day—suppose, for instance you check in the Biltmore on a Tuesday afternoon for the first time—

You are shown to a large, comfortable, homelike, airy, outside room. Hardly have you rung for the bell boy before he is right on the spot to serve you.

Then you realize you are almost famished and amble into the dining room, delighted to find a very informal atmosphere where you can do and act as you jolly well please. When the waiter brings your order, you wonder how in the world such marvelous food can be served at such a reasonable price . . .

The soft music has put you in a pleasant frame of mind and you decide to enjoy a stroll about the terrace (where dinner is served during hot summer months, weather permitting) and thence, back to your room to line up tomorrow's schedule.

At seven-thirty you decide to see a movie at the Fox Theatre (in the Shrine Mosque) and you enjoy the walk of three blocks to this picture palace.

Back "home" at 9:30 and to bed—a bed that invites perfect rest and sublime slumber.

No wonder so many textile men stop at the Biltmore, year after year.

REASONABLE RATES: (No court rooms) Single, $3, $4, $5; two in a room, $1.50 and $2 additional. Reservations for how many?

DINING ROOM: Breakfast 35c, 50c, 60c, 70c Luncheon 75c and $1.00. Dinner $1.00 and $1.50.

ATLANTA BILTMORE

"The South's Supreme Hotel"

HOTEL PENNSYLVANIA

Chestnut Street at Thirty-ninth

PHILADELPHIA

✦

600 SUPERB ROOMS
with
SHOWER BATH
and
TUB and SHOWER
One Person
$2.50 to $5.00 per day
Two Persons
$4.00 to $7.00 per day

●

100 Rooms
with SHOWER
designed for business men at
$2.50 per day

●

Permanent Rooms Apartments

●

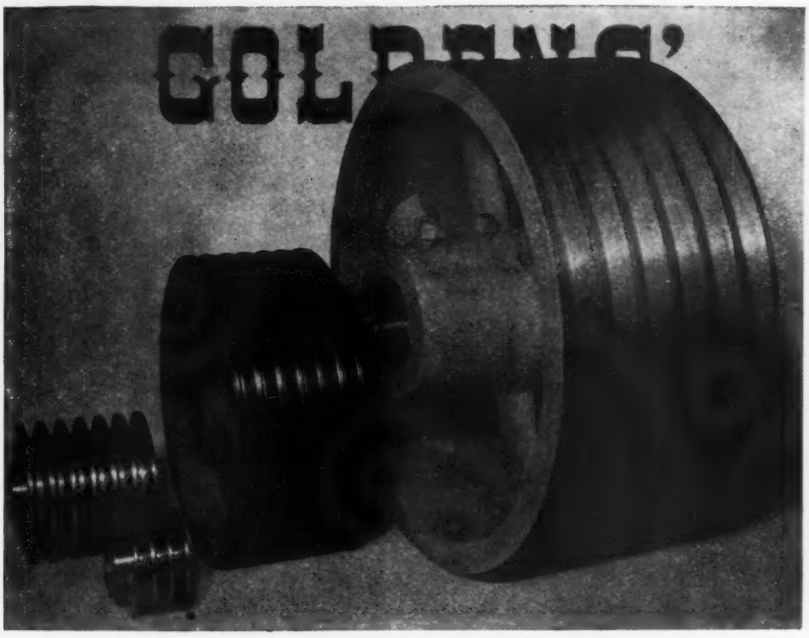
Dining Service
Club Breakfast
40c - 60c - 75c
Luncheon
75c - $1.00
Dinner
$1.00 - $1.60
Platters
From 50c

Just out of the noise and confusion of the congested area. ✦ Overlooking business Philadelphia, where the air is pure and wholesome and the environment quiet and restful ✦ Only ten minutes from the center of the city and ten degrees cooler. ✦ Near both the Pennsylvania and B. & O. Railroad Stations.

UNRESTRICTED DAYTIME PARKING

1882
to
1934

Over Half
a
Century



52 Years
as a
Measure
of
Reliability

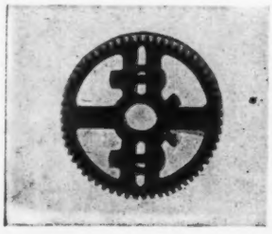
V-BELT SHEAVES

LICENSED BY ALLIS-CHALMERS UNDER GEIST PATENT No. 1,662,511

A difference in Size—but not in Quality

WE can furnish Sheaves to suit your requirements, but—Large or Small—they will all be well designed, strong and true-running, with grooves accurately turned for any licensed make of V-Belt.

GOLDENS' FOUNDRY & MACHINE COMPANY, COLUMBUS, GEORGIA



SERVICE *With* QUALITY TEXTILE REPAIR PARTS

The long, trouble-free service that Henderson Textile Repair Parts are giving every user is stronger evidence than anything we could say regarding their superiority. The reasons for their superiority are higher quality materials, skilled workmanship and precision patterns that make Henderson parts fit perfectly.

There are precision patterns or parts for practically all looms, pickers and other textile machinery ready for quick shipment to you, and our low overhead and close location enable us to make worthwhile savings and render quicker service. Quotations gladly sent on any textile part required.

HENDERSON FOUNDRY & MACHINE WORKS
HAMPTON, GEORGIA

Clipper Hooks are 20% to 30% lower in price than any hook made in America, yet unsurpassed in quality & durability

PROTECTION against operating delays is becoming increasingly important. In this new era of regulated labor and raw materials every plant executive should look to the efficiency of his lacing equipment.

CLIPPER BELT LACER COMPANY, GRAND RAPIDS, MICHIGAN

Clipper
Lacing Equipment

TRADING POST EXCHANGE

BUSINESS—EMPLOYMENT—EQUIPMENT—PROFESSIONAL CARDS—OPPORTUNITIES

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Box number addresses care of COTTON, Grant Bldg., Atlanta, Ga., count as eight words.

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The Brooks Oil Company desire experienced boiler room specialty salesmen to cover two established territories selling Brooks Improved Boiler Metal Treatment and other products. Only well qualified and recommended need apply. Must have automobile. Drawing account and high commission. Excellent opportunity for the right men. State full experience and references. Address Brooks Oil Company, Cleveland, Ohio

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1 Platt Bros. Hopper Feed.
1 Platt Porcupine Opener and Regulator.
22 45" Platt Bros. cards. 1907.
1 Dronsfield Flat Grinder.
1 Platt Bros. Sliver lap machine.
1 Platt Bros. comber.
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1 Indigo Dyeing Machine. 1922.
2 Saco-Lowell Speeders, 8" x 3½" 144 spindles. 1923.
2 Woonsocket Intermediates 10" x 5" 100 Spindles 1928.
14 Draper Looms, Model "D" 44" cloth 1922.
24 Model "E" Draper Looms for 42" cloth 1923.
20 Model E Draper Looms for 34" cloth 1923.
5 120" Crompton & Knowles Duck Looms, Automatic Shuttle changing and Leno Attachment. Motor Drive.
500 New Shuttles for above looms.
Loom beams, motors and spare parts for Crompton & Knowles Looms.
1 Saco-Lowell Thread Extractor.
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Repairers of
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EVERY Textile Man should have these reference books. They cover in a detailed and thorough manner all calculations necessary to be made on any cotton mill machinery manufactured in the United States and constitute one of the best references on the subject obtainable. The two volumes are illustrated with 45 diagrams and contain 21 reference tables. Strong, serviceable binding. Given in conjunction with a two-year subscription to COTTON.

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Then why not try an advertisement in this section of COTTON with its 9,800 copies per month? COTTON has the largest net paid circulation of any journal in the textile field. It reaches the active executives and managers, superintendents, heads of departments and master mechanics, the men directly in charge of the mill and its various departments and the men who buy or dictate the buying of machinery, equipment and supplies.

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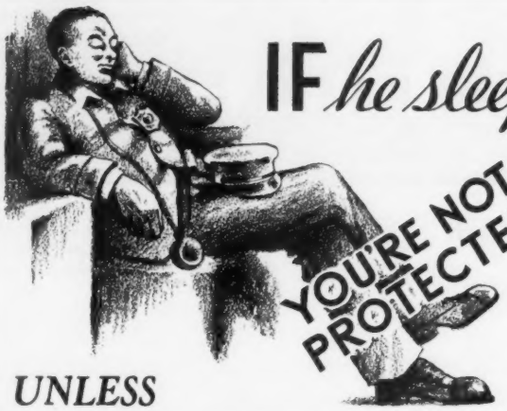

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Perhaps YOUR watchman has never fallen asleep on the job—BUT—there has to be a first time for everything—and his first doze may spell tremendous loss to you by trespassers or molesters who have no business on your property. The industrial world has come to recognize the necessity of Fence—and qyuite naturally Industrial chiefs have turned to Stewart (the world's greatest Fence Builders) to solve their fencing problems. Stewart builds a Fence for every purpose no matter how intricate or how simple the job may be.

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2 *Save Power.* Silent Chain cannot slip.

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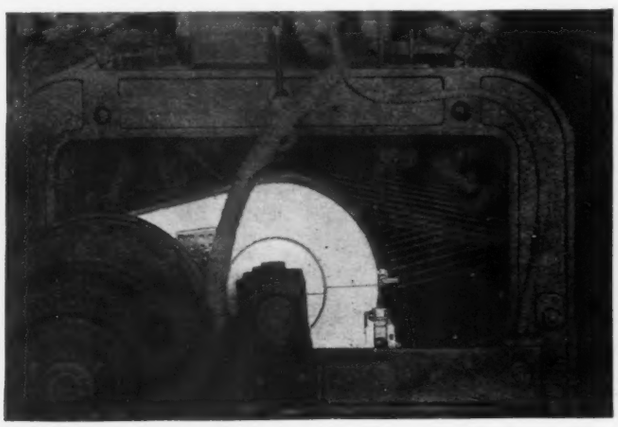
9 *Automatic Lubrication.* The Link-Belt TEX-TIL Automatic-Lubricating Casing prevents oil leakage.

10 *Cost Less,* because of reasons 1 to 9.

Link-Belt Silent Chain Drives are made for any horsepower, and stocked by us and our distributors in sizes up to 60 H.P. Ask for Data Book 125 and Pink Stock List 725. Address nearest office.



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New Veeder-Root COMPRESSION CLAMP*

eliminates drilling and weakening of loom-shaft

SAVES TIME AND MONEY

1 A screw driver, two Veeder-Root Compression Clamps and screws—all that are needed to securely lock the drive worm of a Veeder-Root pick counter to a loom shaft. Quickly and easily attached. Eliminates drilling and weakening the shaft at point of contact.

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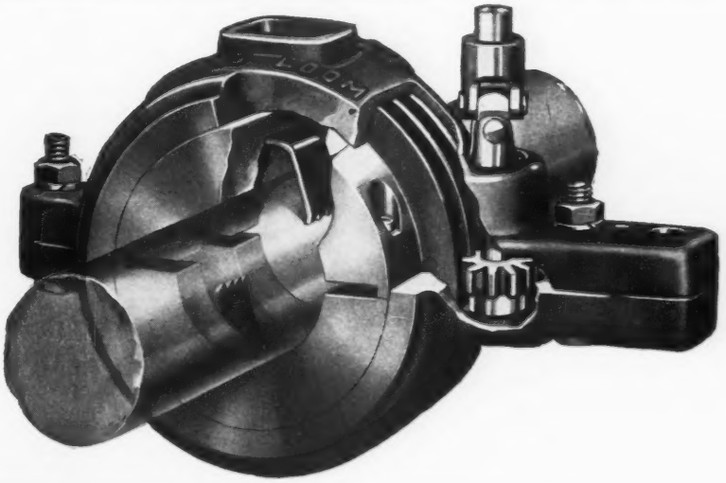
3 Turn down evenly the four holding screws—each with a lock washer under its head. The Compression Clamps spread, the teeth bite into the shaft and lock the worm firmly in place. The job is done and ready for the housing. No fuss, no bother.

4 Here's a phantom view of the completed assembly. The Compression Clamps grip the shaft and lock the worm securely in position. The unit can usually be attached without removing the warp from the loom. There's a Veeder-Root man in your territory. Write to our nearest office and he will get in touch with you immediately.



* United States Letters Patent Pending

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